

INSTRUCTIONS

MANUEL D'INSTRUCTIONS

VideoMovie

VHS-C

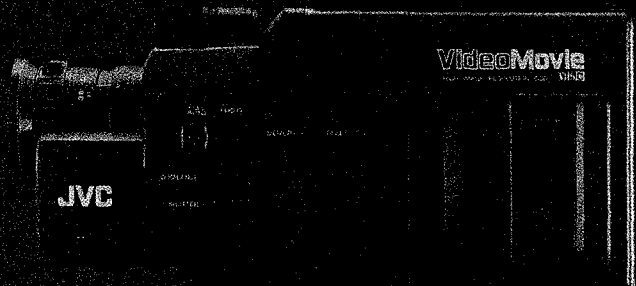
HQ High Quality

CAMERA-RECORDER/PLAYER

GR-40

Specifically for the GR-40U/AA-V5U

Spécial pour le GR-40U/AA-V5U



CCD

Charge Coupled Device

AF
AUTO FOCUS

JVC

For Customer Use:

Enter below the Serial Nos. of the GR-40U VideoMovie and the AA-V5U Battery Charger. The former is located on the bottom of the GR-40U and the latter, on the bottom of the AA-V5U.

Model No. GR-40U AA-V5U

Serial No. [] []

YU30052-46



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The AA-V5U AC Power Adapter/Charger should be used with:

AC 120 V~, 60 Hz in the USA and Canada,
AC 110-240 V~, 50/60 Hz in other countries.

Caution:

To prevent electric shocks and fire hazards do NOT use any other power source.

CAUTION (applies to the AA-V5U)

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

Thank you for purchasing the JVC GR-40U Auto-focus VideoMovie. Weighing only 2.5 lbs, the Auto-focus VideoMovie comprises an auto-focus CCD video camera, and recording and playback functions in a single compact unit for the most convenient live recording capability available today. The Auto-focus VideoMovie uses the VHS recording system and compact video cassettes to make recordings compatible with all VHS recorders. It can also be connected to your television set for direct playback of cassettes; no additional video equipment is required. To take best advantage and gain the most service from your Auto-focus VideoMovie, read this instruction booklet carefully and thoroughly.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

This equipment should be used with DC 9.6 V only.

CAUTION:

To prevent electric shocks and fire hazards, do NOT use any other power source.

NOTES:

- The rating plate (serial number plate) and safety caution of the main unit are on its bottom.
- The rating plate (serial number plate) of the viewfinder is on its bottom.
- The rating plate (serial number plate) of the AC power adapter/charger is on its bottom.

The provided viewfinder is the VF-V40U. Do not use any other viewfinder with the GR-40U.

VHS-C HQ High Quality

- VideoMovie is designed exclusively for the VHS-C video cassette. Only cassettes marked VHS-C can be used with this unit.
- HQ VHS is compatible with existing VHS equipment.

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INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna;
 - Relocate this equipment with respect to the receiver;
 - Move this equipment away from the receiver;
 - Plug this equipment into a different outlet so that this equipment and receiver are on different branch circuits.
- If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the US Government Printing Office, Washington, D.C., 20402, Stock No. 004-000-00345-4.

Warning on lithium battery

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C (212°F) or incinerate.

Replace battery with Matsushita Electric CR 2025, use of another battery may present a risk of fire or explosion.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

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FEATURES

- Allows direct playback with no additional components necessary.
- Ultra-compact and ultra-lightweight: a mere 2.5 lbs. (1.1 kg).
- 4-Page Digital Superimpose function for mixing titles or illustrations into a live recording.
- Multiple-speed electronic shutter for sharp clear playback of fast action shots (1/1000, 1/500, 1/250, 1/60 (standard) second).
- Newly developed high-resolution 1/2" field-storage type CCD (Charge Coupled Device) pickup delivering more than 400-line resolution pictures in camera section.
- One-button full-auto operation of focus, exposure, and white balance.
- Powerful, two-speed 6:1 power.
- HQ (High Quality) System for superlative picture quality.
- Maximum of 60 minutes recording time on a single tape in EP mode.
- High-sensitivity/low-lag design: allows shooting in light as low as 8 lux.
- Image Sensing auto-focus.
- Automatic Color Tracking white balance with three preset positions.
- Backlight compensation button.
- Audio/video fader linked to start/stop trigger.
- Large, easy-to-read LCD (Liquid Crystal Display).
- Ultra-compact adjustable electronic viewfinder (monochrome CRT, 0.6-inch screen) with diopter control, also for instant on-the-spot playback.
- Selectable automatic date recording function.
- Recordable date/time display.
- Elapsed recording time counter.
- Second recording start/stop button provided on top of GR-40U.
- Zero Frame Editing for glitch-free, smooth scene transitions.
- Dubbing mode switch provided for best results when dubbing.
- Selectable quick review function.
- One-button recording standby mechanism.
- Master Edit Control system: allows control of both GR-40U and connected designated JVC VCR using GR-40U's controls, and preroll editing for edits free of transition-point gaps and noise.
- Shuttle Search in both directions.
- Unique grip battery doubles as palm grip, saving weight and space.
- Ergonomic design with palm grip and finger rest for trigger control.
- Trigger alarm system for preventing recording errors.
- Three-way power supply flexibility: battery pack, AC power adapter, and car battery.

The GR-40U is designed to be used with NTSC-type color television signals. It cannot be used for playback with a television of a different standard. However, live recording and viewfinder playback are possible anywhere. Use the BN-V5GU/BN-V6GU/BN-V7GU battery packs and, to recharge them, the provided multivoltage AC power adapter/battery charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

PRECAUTIONS

For safety, strictly observe the following instructions.

- Do not disassemble or modify the unit.
- Prevent inflammables, water and metallic objects from entering the unit.
- Do not use the unit when there is lightning in the vicinity. Disconnect the power cable of connected equipment.

Avoid using the unit under the following conditions:

- Places subject to excessive humidity or dust.
- Near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
- Places subject to soot or steam such as near a cooking stove.
- Places subject to excessive shock or vibration.
- Near a television set (rolling pictures or howling might result).
- Extremely hot places.

Do not expose the unit to high temperatures over 40°C (104°F) for long periods.

If the unit should be subjected to direct sunlight, or left in a closed car in summer, or placed near a heater, the CCD and the auto-focus sensor may deteriorate and the cabinet may become deformed. Furthermore, this also may cause the transistors and other electronic and mechanical parts to malfunction. Remember the following:

- Do not leave the unit in places of over 50°C (122°F).
- Do not use the unit in places of over 40°C (104°F).
- Do not use the unit in places of below 0°C (32°F).
- Protect the unit from excessively dry or excessively humid conditions (below 35% or above 80% humidity).
- For long storage, select a place between -20°C (-4°F) and 30°C (86°F).

Take special care for protection of the unit.

- Do not allow the unit to become wet.
- Do not leave the unit in closed cars on hot summer days.
- Take special care not to drop the unit or strike it against hard objects. Protect from shocks during transportation.

Make it a rule to observe the following instructions.

- Do not remove the battery pack or disconnect other power supply units during recording or playback before pressing the POWER switch to OFF. If not observed, this will cause tape damage.
- When the unit is not in use, remove the battery pack. Keep the lens and viewfinder eyepiece always clean.
- When the lens is dirty or dusty, blow it off first and then gently wipe with a soft brush or lens cleaning paper.

- The lens is likely to become moldy if left dirty.

Be careful not to damage the CCD.

- Do not keep the lens directed at extremely bright objects such as the sun or other light sources for long periods. Although the CCD is less susceptible to such burn than a tube would be, caution should be exercised when using this unit. Most importantly, the lens should be capped except while actually shooting.

- Do not direct the eyepiece of the viewfinder at the sun.

Auto-focus requires a bit of consideration.

- Do not touch the focus ring while the auto-focus mechanism is in operation as this could damage the auto-focus mechanism.
- When a filter or a special-effect lens is to be attached to the end of the lens, be sure to turn power off or switch from the Auto-focus mode to the Manual mode. NEVER attempt to attach a filter or lens while the auto-focus mechanism is operating as this will result in malfunctioning. (If a teleconversion or wide-angle conversion lens is attached, the auto-focus mode cannot be used.)

Handle the unit carefully.

- Protect the microphone from excessive shocks.
- Do not carry the unit by holding it only by the viewfinder.

Moisture condensation prevents use of the unit.

- You have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass's outer surface. This same phenomenon occurs on the head drum of a video recorder when the recorder is moved from a cool place to a warm place, after heating in a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the recorder itself.
- If moisture condensation occurs on the head drum, a condensation warning appears in the counter display and the unit enters the Stop mode, unable to function. In such a case, wait for a few hours until the indicator disappears.

Maintenance

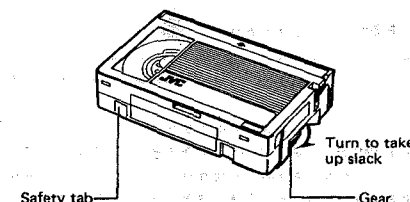
- When the cabinet is dusty, clean by gently wiping with a soft cloth.
- Avoid the use of strong cleaning agents such as benzene or alcohol as they may damage the cabinet.
- Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC Service Center.

VIDEO CASSETTES

- The GR-40U employs only the cassettes carrying the VHS marks.
- Recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
- An inverted cassette cannot be inserted.
- Do not load and unload the cassette repeatedly without allowing the tape to run at all. This will slacken the tape and thereby damage it.
- Make certain before loading the cassette that the tape is not slackened. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up slack.
- The cassette is equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording is impossible. If you wish to record on a cassette whose tab has been removed, use adhesive tape to reseal the slot.
- To avoid excessive exposure to dust and fingerprints, do not open the front tape cover.

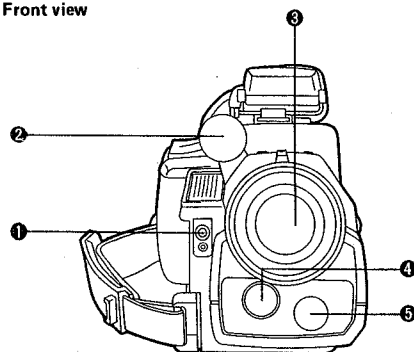


Storage of cassettes

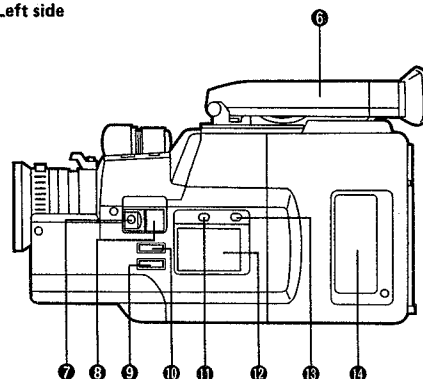
- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid storing the cassettes in humid or dusty places.
- Do not drop the cassettes. Do not expose them to violent vibrations or shocks.
- Do not expose the cassettes to strong magnetic fields (near a motor, transformer or magnet).
- Place the cassettes in cassette cases and position them vertically.

CONTROLS AND CONNECTORS

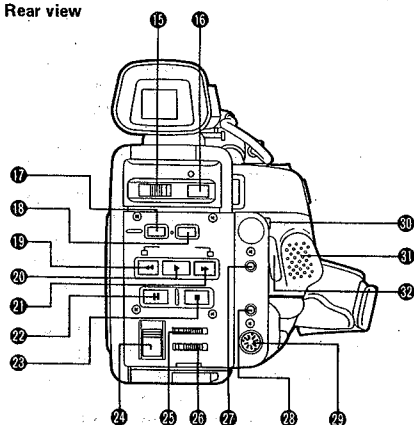
Front view



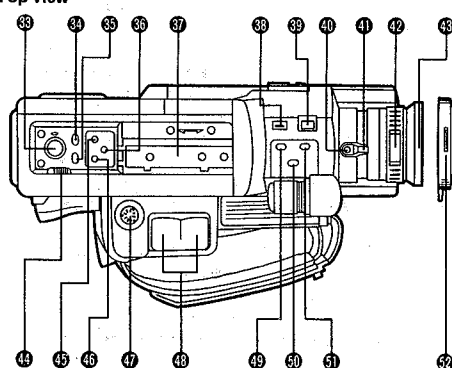
Left side



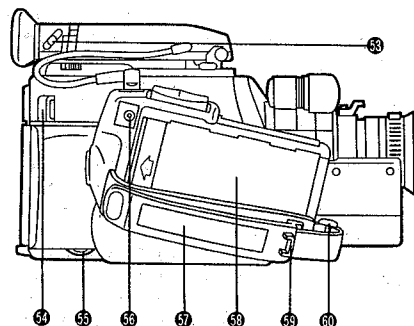
Rear view



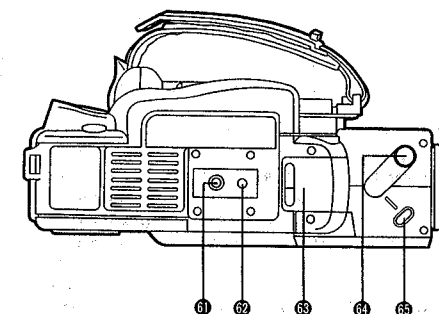
Top view



Right side



Bottom view



1 External microphone jack (MIC)

2 Exclusive microphone

Omnidirectional condenser microphone for simultaneous sound recording.

3 6:1 zoom lens

F/1.4, f=9–54 mm. Filter diameter: 49 mm.

4 Auto-focus sensor window

Allows light to enter for measuring the camera-to-subject distance.

5 White balance sensor window

Allows light to enter for white balance adjustment.

6 Electronic viewfinder

For monitoring scene being shot or the playback picture after recording. Several indicators are included, as well as the date/time or elapsed recording time if selected.

7 FULL AUTO button

Pressing this button puts the focus and white balance under automatic control and selects the standard shutter speed. Auto-focus can be cancelled by pressing the FOCUS button; auto white balance can be cancelled by pressing the W.BALANCE button; the high-speed shutter can be selected by pressing the SHUTTER button. Pressing the FULL AUTO button in the full-auto mode has no effect.

8 FOCUS select button

Switch to AUTO for automatic focus, and switch to MANUAL to focus manually. Check on the LCD. The focus mode is reversed each time this button is pressed. The auto-focus mode can also be selected (together with the auto-white mode) by pressing the FULL AUTO button.

9 SHUTTER select button

Pressing this button switches the shutter between 1/1000 ("1000"), 1/500 ("500"), 1/250 ("250")-second high speed shutter and 1/60-second ("STD") speeds, as displayed on the LCD. The standard shutter speed can also be selected by pressing the FULL AUTO button.

10 W.BALANCE select button

The white balance is manually selectable using this button. Press once to display the current white balance mode in the LCD. Continue pressing to cycle through the available modes.

☀: Halogen or tungsten lighting.

💡: Fluorescent lighting.

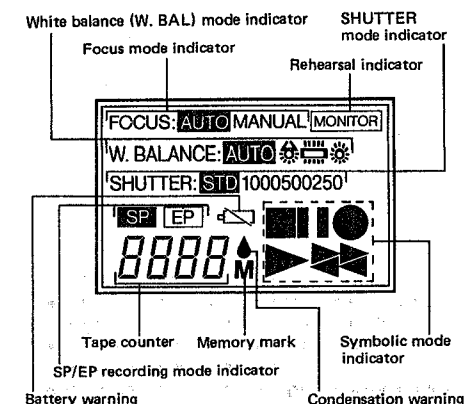
☀: Daylight.

AUTO: Automatic white balance adjustment.

11 Counter MEMORY button

Press this button at a point on the tape you want to locate later after resetting the counter to "0", and the tape will stop automatically at the counter reading of around "0" during rewind or fast forward.

12 LCD (liquid crystal display)



Tape counter: Shows from "0" to "9999".

Battery warning: Blinks when the battery power becomes insufficient for normal operation.

Condensation warning: Appears when excessive condensation occurs inside the unit.

Memory mark: Appears when the MEMORY button is pressed.

Symbolic mode indicator

STOP:	■	REWIND:	◀◀
PLAY:	▶	FAST FORWARD:	▶▶
PAUSE:		REVERSE SHUTTLE SEARCH:	▶◀◀
RECORD:	●	FORWARD SHUTTLE SEARCH:	▶▶▶
RECORD PAUSE:	●		

13 Counter RESET button

Press to reset the counter to "0".

14 Cassette holder

Insert a VHS video cassette for recording or playback.

15 POWER switch

Slide to turn the power on. The Stop indication appears on the LCD. Slide again to switch off power.

⑫ REC standby button

Press to engage the Recording standby mode. To start recording, press the recording start/stop button ⑭, ⑮.

⑬ MONITOR button

Push this button when you wish to rehearse shots before actually recording them. This function allows you to view the scene on the viewfinder without recording it. Push the STOP button to release it.

⑭ QUICK REVIEW/EDIT button

If you want to review the end of the recorded segment for confirmation, press this button from the Record-Pause mode; the tape will be rewound for about two seconds of program time and played back automatically for this section, after which it will stop in the Record-Pause mode in standby for the next shot. When dubbing from the GR-40U to a designated JVC VCR, it also functions to begin VideoMovie playback in synchronization with video deck recording (see "Using the Master Edit Control system", page 31).

⑮ REW/SHUTTLE SEARCH button

Pressing this button in the Stop mode rewinds the tape; pressing it in the Play mode allows fast playback in reverse (three times normal speed in SP mode, seven times normal speed in EP mode.)

⑯ PLAY button

Press to start playback. When this button is pressed when the unit is in the REC PAUSE mode, the unit will enter the REC mode.

⑰ FF/SHUTTLE SEARCH button

Pressing this button in the Stop mode fast-forwards the tape; pressing it in the Play mode allows fast playback (three times normal speed in SP mode, seven times normal speed in EP mode).

⑱ PAUSE/STILL button

Press to view a still picture during playback or pause playback. When this button is pressed in the REC mode, the unit will enter the REC PAUSE mode.

⑲ STOP button

Press to engage the Stop mode.

⑳ EJECT switch

To open the cassette holder.

㉑ SP/EP recording mode select switch

Set to SP to record at standard tape speed. Set to EP to record at a slower tape speed, allowing an extended recording time of up to one hour with a single cassette.

㉒ DUBBING ON/OFF switch

Normally, set to OFF. For best picture quality when dubbing, set it to the ON position.

㉓ REMOTE control jack

For connection of the optional RM-P1U pause remote control unit and RM-V10U remote control unit.

㉔ Earphone jack (PHONE)

㉕ AV OUT connector

Both audio and video signals may be delivered from this connector. For playback with a TV set not equipped with A/V terminals, connect the RF-V3U RF unit (provided) to this connector and to the TV. To dub from this unit, connect the A/V input connectors of a second recorder to this connector, using the optional VC-V826U A/V cable. To play back from this unit to a TV set, make a connection between this connector and the TV's A/V input terminals using the A/V cable.

㉖ ALARM ON/OFF switch

Switch to on to engage the trigger alarm system. Switch to off when you do not wish to use this system.

㉗ Finger rest

Place your thumb on this grooved area next to the start/stop switch between switch operations.

㉘ Recording start/stop button (Trigger button)

Press this button in the Recording Standby mode to start recording. Pressing it again re-engages the Recording Standby mode.

㉙ Second recording start/stop (SUB TRIGGER) button

Functions exactly as the other recording start/stop button, for use when recording with the GR-40U held low.

㉚ DATE/TIME ON/OFF button

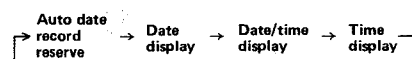
Press this button when you do not wish to record the date/time. This will remove date/time indications from the viewfinder. Press again to record date/time. Date/time will reappear in the viewfinder.

㉛ REC TIME RESET button

Press this button to reset the elapsed recording time to zero. Ejecting the cassette also does this.

㉜ DATE/TIME MODE button

Press this button to select the date/time display and recording mode. It cycles through the modes in the following order:



The auto-date-record function automatically displays and records the date for 5 seconds upon turning on the power and beginning recording. Before recording begins, this mode is indicated in the viewfinder by auto date record reserve indication "—:—:—".

㉝ Viewfinder mount

Attach the provided viewfinder.

㉞ PAGE button

Press this button to select which page of memory you wish to store your title in. This button only functions when the title is displayed in the viewfinder.

㉟ Title ON/OFF button

Press to mix memorized title or illustration with action being recorded. Press again to end mixing process.

㊱ Macro button

Turn the zoom ring while pressing this button for macro shooting.

㊲ Manual zoom lever

Use to turn the zoom ring manually.

㊳ Manual focus ring

Use to turn the focus ring manually.

㊴ Lens hood

㊵ REC TIME ON/OFF switch

When this switch is set to ON, the viewfinder displays the elapsed recording time. Switch to OFF to cancel the display.

㊶ DATE/TIME SELECT button

Use to select the portion of the clock or date settings to be changed. Cycles through the year, month, day, hour, and minute settings. To end adjustment, press once after selecting the minute portion.

㊷ DATE/TIME SET button

Use to set the built-in clock and date function.

㊸ Viewfinder cable connector

Connect the viewfinder cable.

㊹ Power zoom buttons

For automatic zooming at slow speed, press lightly. For regular speed zooming, press firmly. "T" is for telephoto zooming and "W" is for wide-angle zooming.

㊺ IMAGE REVERSE button

Press this button to activate the title reverse effect. The function will switch from positive to negative mode with successive pressing of this button.

㊻ Title MEMORY button

Up to four "pages" of memorized titles can be stored. The digital memory is maintained by the lithium battery which powers the unit's clock. Each time the title MEMORY button is pressed, a previously stored title will be erased, and a new one will be stored in its place in the designated page of memory.

㊼ COLOR button

Press this button to select the color for a title or illustration. The color choices cycle as follows: black, white, yellow, cyan blue, green, magenta, red, blue. Press this button repeatedly until the desired color appears.

㊽ Lens cap

Cap the lens when not in use.

㊾ Dioptic adjustment control

Adjusts the viewfinder lens to suit the operator's eyesight.

㊿ Slots for shoulder strap

① TRACKING control

Minimizes noise bars, if observed, during playback.

② DC IN terminal

For connection of the provided AA-V5U AC power adapter/battery charger, optional BH-V5U car battery charger or AP-P1U car battery cord for DC power supply.

③ Grip strap

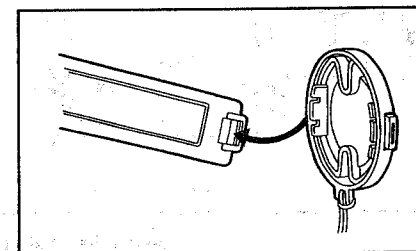
Secures the operator's hand to the hand grip. Adjusts to fit hand size.

④ Battery mount

The battery pack serves as a contoured handgrip when attached to the battery mount.

⑤ Lens cap hook

This keeps the lens cap from swinging during shooting.



⑥ Battery pack release lever

Move in the direction of the arrow to release the battery pack.

⑦ Tripod mounting socket

⑧ Stud hole

⑨ CLOCK battery compartment

Holds the lithium battery that powers the date, time and title memory function.

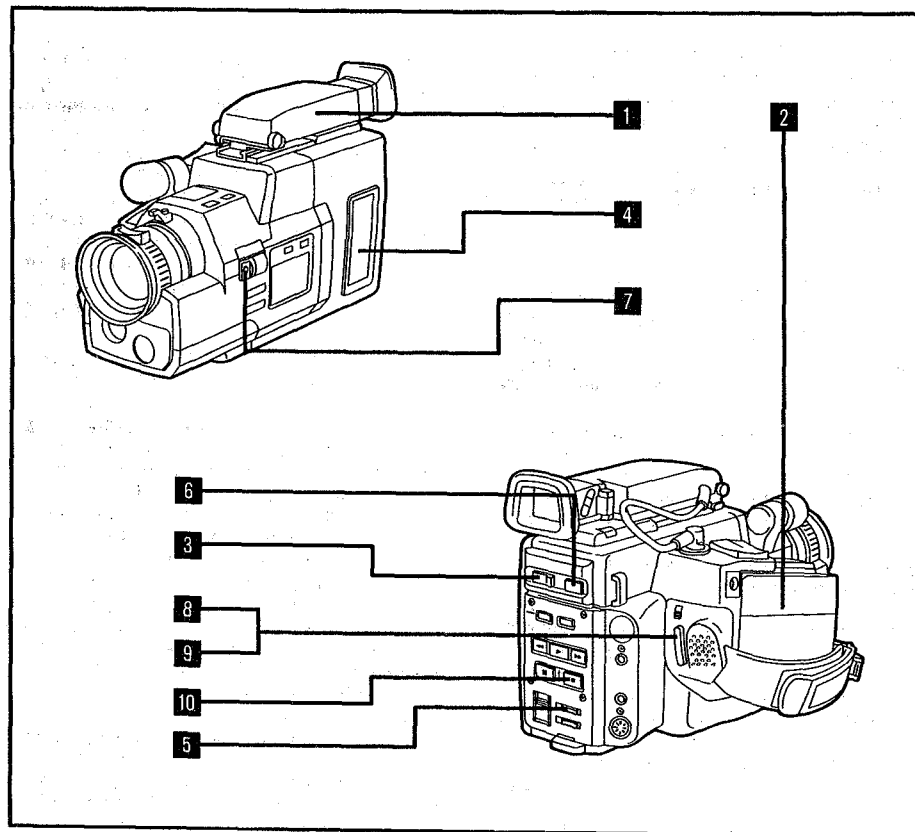
⑩ BLC button

Iris control is always automatic. For backlight compensation, press this button. While it is being pressed, the iris is 1 - 2 f-stops wider than the automatic setting.

⑪ FADER button

To fade out the picture to a white blank screen, press this button, then press the recording start/stop button to start fading out. To fade in from a white blank screen, press this button, then press the recording start/stop button to start fading in.

LIVE RECORDING HAS NEVER BEEN SO EASY



Full-auto outdoor recording procedure

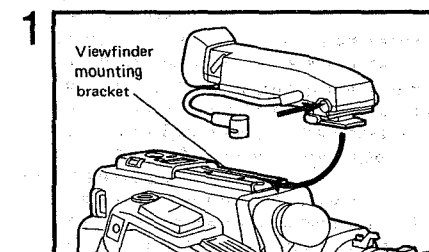
- 1 Mount the viewfinder.
(Refer to page 11 for details.)
- 2 Attach the battery pack.
(Refer to page 13 for details.)
- 3 Slide Power switch.
- 4 Pop in a cassette.
(Refer to page 14 for details.)
- 5 Set tape speed to SP or EP.
- 6 Press REC standby button.
- 7 Press FULL AUTO button.
- 8 Shoot (push start/stop button).
- 9 Stop recording (push start/stop button).
- 10 To end recording, press STOP button.
• To play back the recorded tape, press REW button and then PLAY.

BASIC PREPARATIONS

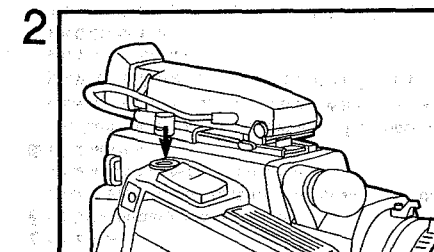
Mounting the Viewfinder

Switch off power before mounting or removing viewfinder.

Mounting the viewfinder

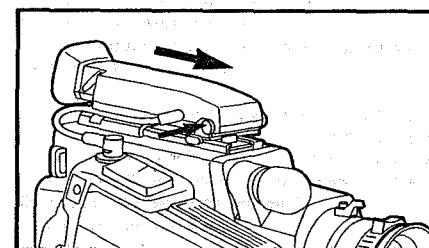


Align the viewfinder's coupling fixture with the mounting bracket on the body and slide the fixture into the bracket while pressing the knob.



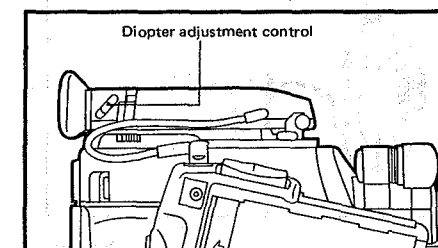
Connect the viewfinder cable to the viewfinder cable connector (VF).

Removing the viewfinder



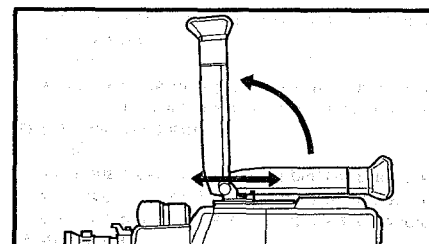
Pull out the viewfinder cable and slide the viewfinder out of the bracket while pressing the knob.

Diopter adjustment



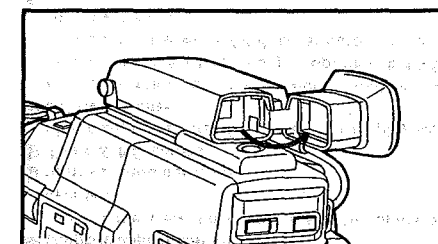
The viewfinder lens can be adjusted to suit the operator's eyesight by sliding the diopter adjustment control.

Positioning the viewfinder



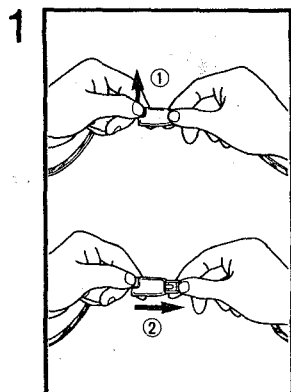
The viewfinder can be positioned for best viewability. It can slide forward or back and can be tilted up 90°.

Opening the eyepiece

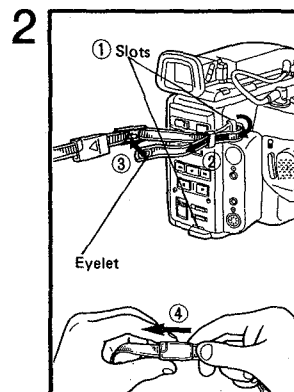


The viewfinder eyepiece can be opened for cleaning or better viewability in playback.

Attaching the Shoulder Strap

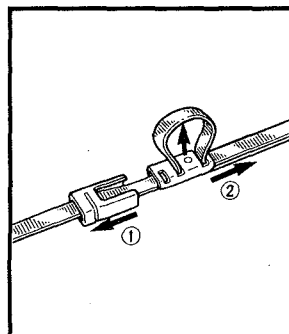


While pressing the release button down and sideways (1), slide the buckle out of the buckle shell in the direction of the arrow (2).



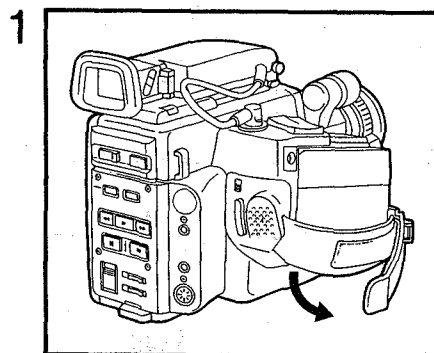
Guide the end of the strap through the slot on the GR-40U (1) and the keeper (2), and fasten the strap's eyelet on the buckle's hook (3). Then slide the buckle back, as shown, until it clicks (4).

How to adjust the length of the shoulder strap

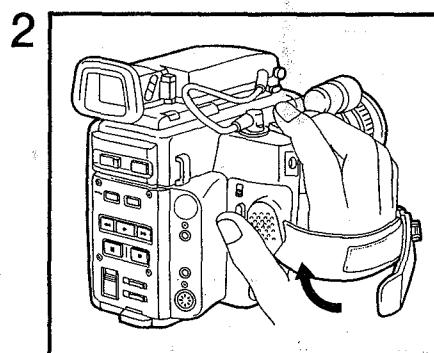


1. While pressing the release button, slide the buckle out and pull some slack through the buckle.
2. To lengthen the strap, feed the strap from (2) toward (1). To shorten it, feed it from (1) toward (2).

Adjusting the Grip Strap



Separate the Velcro strip to expand the loop.



Pass your right hand through the loop and grasp the lens grip. Adjust the length of the strap to suit your hand size and refasten the Velcro strip.

POWER SUPPLY SYSTEM

The convenient 3-way power supply system gives you a choice of the most appropriate power supply unit, depending on the application.

CAUTION

- No function is available without power supply.
- Do not use any power supply other than specified.
- Never attempt to use these power supply units with any equipment other than the VideoMovie.

Where AC power is not available

Use the battery packs:

- BN-V5GU (Regular)
- BN-V6GU (High-capacity)
- BN-V7GU (Super High-capacity)

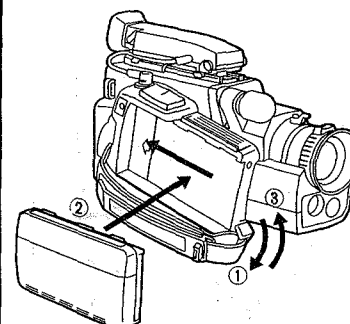
Note:

The battery pack has been kept in the uncharged state for shipment. Therefore, before use, be sure to charge it. See page 33.

Attaching the Battery Pack

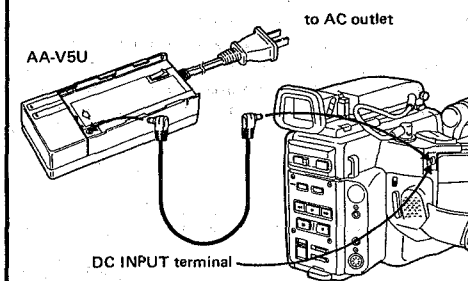
1. Pull down the battery pack release lever.
2. Align the battery pack over the outline in the battery pack mount, and slide the battery pack into place in the direction of the arrow.
3. Push up on the battery pack release lever, until it locks into place.

To remove the battery pack, pull down the battery pack release lever and slide out the battery.



With AC power

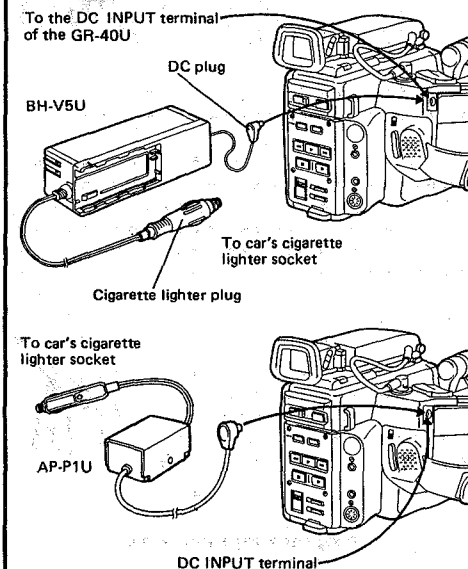
Use the provided AA-V5U AC power adapter/battery charger.



In a car

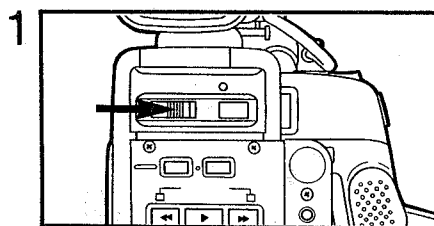
Use the optional AP-P1U car battery cord or BH-V5U car battery charger.

- Leave the car's engine idling when using the car battery. (For use with 12 V negative-grounded cars only.)

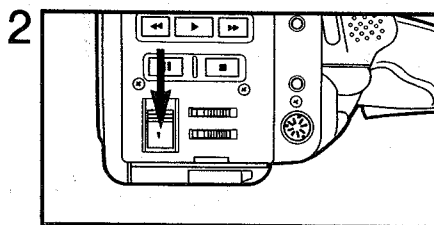


LOADING AND UNLOADING A VIDEO CASSETTE

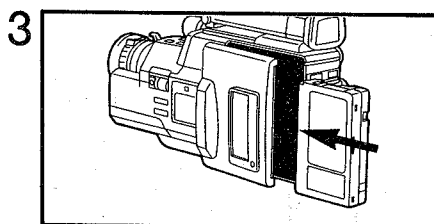
LOADING



Slide the POWER switch to turn power on.

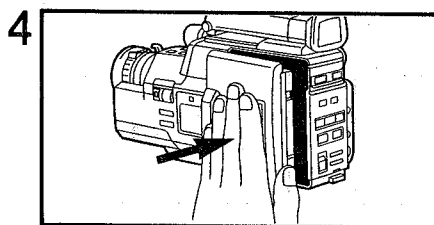


Open the cassette holder by pressing the EJECT button.



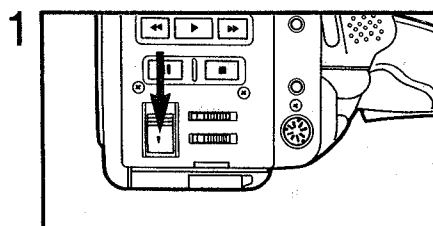
Insert the cassette with its printed arrow facing outward.

First remove tape slack, then insert the cassette correctly. See page 5.

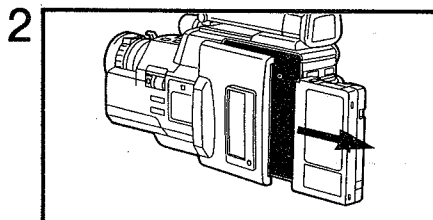


Close the cassette holder by pushing its center area.

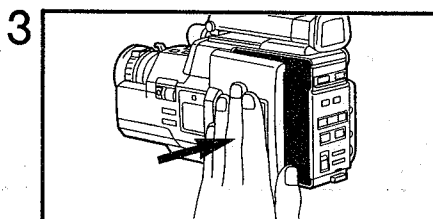
UNLOADING



Make sure the unit is in the Stop mode. Press the EJECT button. The cassette holder will open.



Remove the cassette.



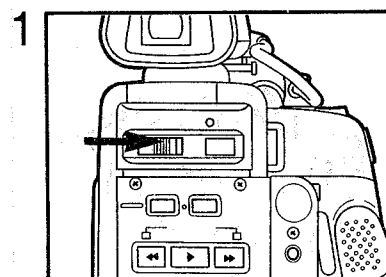
Close the cassette holder by pushing its center area.

•When not in use, switch off power.

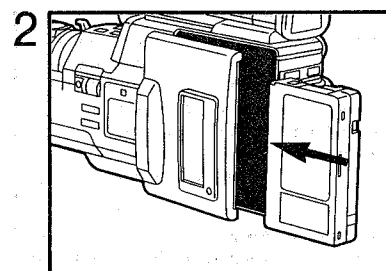
Notes:

- Do not repeat loading and unloading of the cassette without running the tape, as this will slacken the tape, causing tape damage.

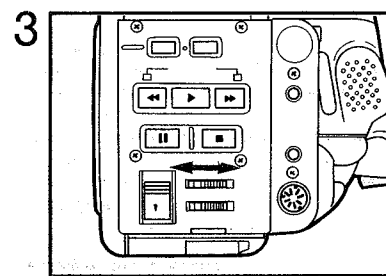
RECORDING OPERATION



Slide the POWER switch to ON.

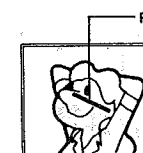


Insert a video cassette correctly (with its safety tab in place).



Set the tape speed to SP or EP.

Precautions for auto-focus



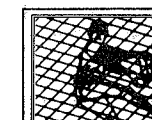
Focus detection zone

- A small area around the center of the picture, which varies depending on the zoom and focus conditions, is used to detect focus. (no actual indication provided on the screen.)

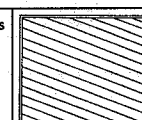
CAUTION

- Do not touch the focus ring while the auto-focus mechanism is in operation.
- Be careful not to cover the auto-focus sensor window, otherwise accurate focusing will not be possible.
- When not in use, do not leave the GR-40U in the Auto-focus mode with power on; otherwise light entering the auto-focus sensor window will operate the auto-focus mechanism, consuming power.

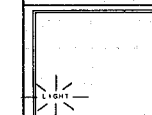
Correct focus may not be obtained in the following situations. In such cases manual focusing should be performed to obtain proper focus.



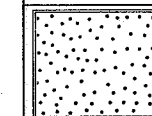
Two subjects at different distances overlap in the same scene.



Slanted lines only.



Low illumination where the under-exposure indicator appears on the viewfinder screen.



Minute patterns or identical patterns that are regularly repeated.

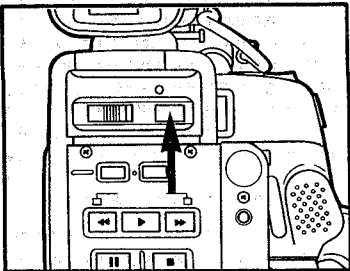
Note:

- If the lens and/or auto-focus sensor window are smeared with stains or blurred with condensation, accurate focusing is not possible. Keep them clean. If they become dirty, wipe with a piece of soft cloth. When condensation occurs, dry them by wiping with a soft cloth or wait for conditions in which they become dry.

One-hour recording

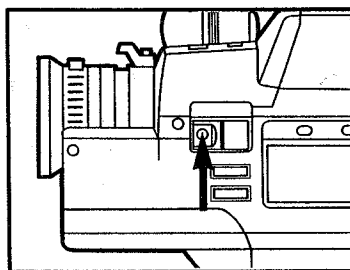
- To record longer on a single cassette, use the EP (Extended Play) mode.
- For EP recording, a higher-capacity battery pack may be used.
- SP: 20 minutes
- EP: 60 minutes

4



Press the REC Standby button. The unit enters the Recording Standby mode (as shown by the indicators in the viewfinder and on the LCD).

5



For full-auto operation, press the FULL AUTO button.

For manual override, use the W. BALANCE and FOCUS buttons.

- Press the W. BALANCE button so that the required symbol appears on the viewfinder and on the LCD.

- ☀: when the subject is illuminated by a halogen or tungsten lamp.

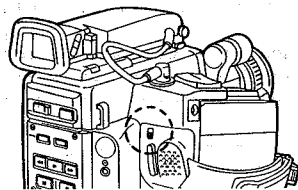
- ☀: when the subject is illuminated by a fluorescent lamp.

- ☀: when you shoot in the daytime outdoors.

- When shooting under fluorescent light, always use the fluorescent light setting in the manual white balance mode for best results.

- For manual focus, press the FOCUS button so that MANUAL is shown on the LCD. A focus-aid indicator will appear in the viewfinder.

Trigger alarm system



When the ALARM ON/OFF switch is set to on, an electronic alarm beeps when the Recording start/stop button is pressed to begin recording. The electronic alarm beeps twice when the Recording start/stop button is pressed for record pause. This alarm helps prevent recording errors.

Auto or manual?

- Iris control is always automatic. Therefore, possible combinations of auto and manual functions are as follows:

Control Function	FULL AUTO	W. BALANCE	FOCUS	FOCUS W. BALANCE
White balance	Auto	Manual	Auto	Manual
Focus	Auto	Auto	Manual	Manual
Iris	Auto	Auto	Auto	Auto

- Be careful not to cover the white balance sensor window, otherwise correct white balance will not be obtained in the auto mode.

- For high-speed electronic shutter, see page 22.

Elapsed time display

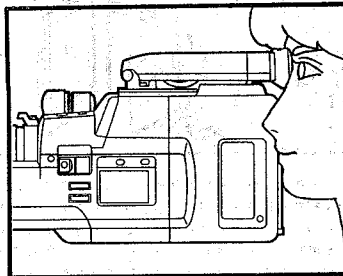
The accumulated recording time (elapsed time) can be displayed on the viewfinder.

1. Set the REC TIME ON/OFF switch to ON. The recording time is displayed on the viewfinder screen.
2. If you wish to reset it to "00:00", press the REC TIME RESET button.

Notes:

- When you wish to disengage the Elapsed Time Display mode, set the REC TIME ON/OFF switch to OFF.
- 1:00:00 indicates 1-hour has elapsed.
- Unloading the cassette also resets the display to "00:00".
- This convenience functions only when camera shooting is performed.

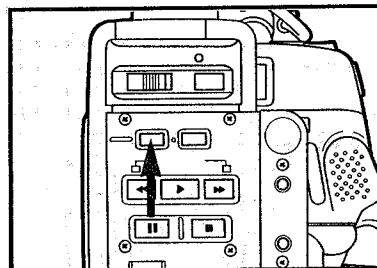
6



Determine the focus and composition by referring to the viewfinder image. For zooming, see page 24.

For date/time recording, see page 21.

Rehearsal



If you wish to rehearse shooting angles, compose scenes, etc., without actually recording on the tape, press the MONITOR button, instead of REC. The aimed-at scene will appear on the viewfinder screen. For full-auto rehearsal, also press the FULL AUTO button. To engage the Recording Standby mode from rehearsal, press the REC button. To disengage the Rehearsal mode, press the STOP button.

- Rehearsal is possible whether a cassette is loaded or not.

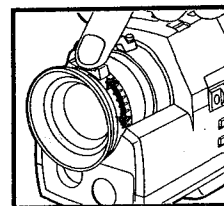
- With a cassette loaded, rehearsal is not possible during rewind or fast forward.

- The power save circuit does not function during rehearsal. (For power save function, see page 20.)

Manual focus

If the manual focus mode is selected, proceed as follows:

- ① Zoom in on a subject by pressing the "T" button.
- ② Focus onto it by turning the focus ring.
- ③ Determine the composition by pressing the "W" button.



Caution:

Covering the white balance sensor while manually focusing will result in poor color reproduction.

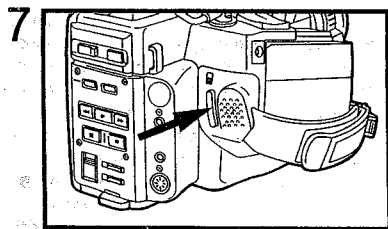
Note:

- When you use the manual focus mode, be sure to focus the lens in the maximum telephoto position. If you focus in on a certain subject in the wide-angle position, sharply-focused images cannot be obtained when zoomed up because the depth of field is reduced at longer focal lengths.

FOCUS INDICATORS

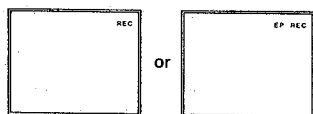
The focus indicators on the viewfinder screen function in the manual focus mode.

Condition	Indication	Corrective operation
Focus point behind the subject		Turn the focus ring clockwise until the center square lights.
Correct focus		Keep the focus ring in the same position.
Focus point in front of the subject		Turn the focus ring counterclockwise until the center square lights.
Indication not possible because of low contrast		Estimate the subject distance and set the focus ring referring to the distance scale on it.

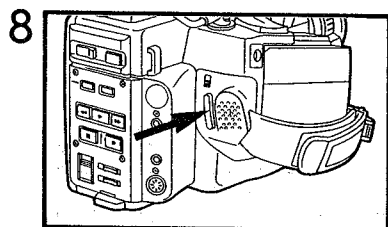
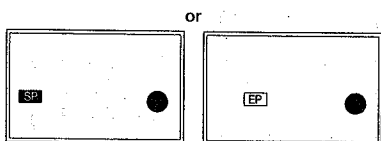


Press the start/stop button.

- This causes REC or EP REC to appear on the viewfinder screen, showing that recording is actually taking place.
- Be careful not to touch any buttons inadvertently during shooting.



• The LCD display shows:



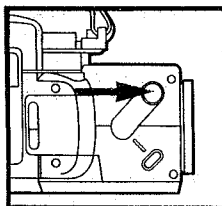
To stop recording temporarily, press the start/stop button once again.

To restart recording, press the start/stop button.

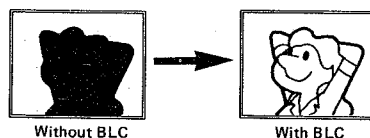
- For a pause longer than 3 minutes, press the POWER switch to OFF.
- If the Recording Standby mode continues for longer than about 5 minutes, the unit switches itself off automatically. To restart recording, turn the power on. This makes clean assembled recordings possible even after a long pause.

Backlight compensation

- Press the BLC button. While it is being pressed, the iris is 1–2 f-stops wider than that adjusted automatically.

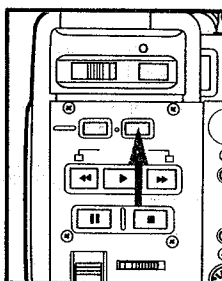


When excessive lighting is located in back of the subject, correct exposure may not be obtainable. To compensate for this, use BLC.



Quick Review function

- If you want to review the end of the last recording for confirmation, press the QUICK REVIEW/EDIT button from the Recording Standby mode; the tape will be rewound for about 2 seconds for program time and played back automatically for this section, after which it will stop in the Recording Standby mode for the next shot.

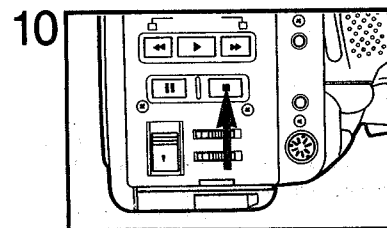


Notes:

- The TRACKING control should be at its center position.
- Distortion might occur when playback starts. This is normal.

Assemble recordings

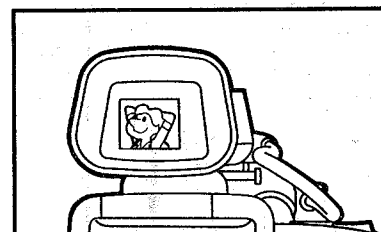
- Repeating steps 8 and 9 produces assemble recordings. In playback, the picture may be slightly distorted at the point between separate takes. This is not due to any defect of the unit.
- If recording is restarted from the Stop mode, a few frames of the previously recorded picture are replaced with a new recording. To avoid this, follow the technique described in "Assemble Recording Technique-2" on page 20.



To end recording, press the STOP button.

- After making sure that the tape has stopped, press the POWER switch to OFF.

Viewfinder Monitoring

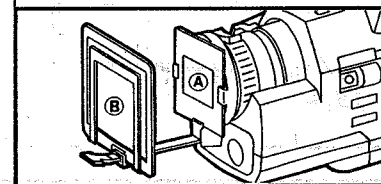


- Rewind the tape to a point from which you want to check the recording.
- Press the PLAY button, and you can view the playback picture on the viewfinder screen.

Notes:

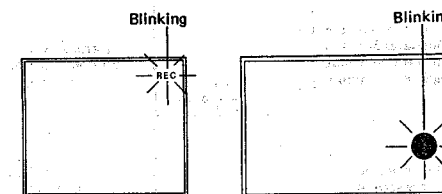
- Pressing the PAUSE/STILL button during playback stops the picture on the viewfinder screen.
- Shuttle search is also possible in both directions.

A photographic slide can be recorded by inserting it in (A) and inserting a blank white card in (B) of the provided title easel. Slides up to 1/8" thick can be used. Illuminate (B) from behind for best results.



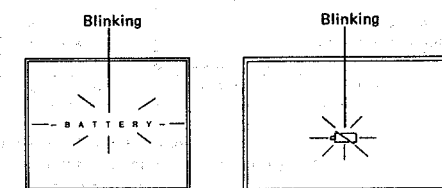
Warnings

Tape-end warning



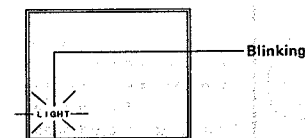
- The recording indicator blinks on the viewfinder screen and the LCD a few minutes before the end of the tape.
- When the end of the tape is reached during recording, the Stop mode engages automatically.

Battery warning



- When the battery power is coming to an end, a battery warning indication appears in both the viewfinder and the LCD. Replace the battery pack with a fully charged one.
- After these indications appear, the power turns off automatically. In this state, however, pressing the POWER switch while holding EJECT button pressed turns the power on and ejects the cassette.

Low-light warning



- If the blinking "LIGHT" indicator appears on the viewfinder screen, the amount of light is insufficient. Increase the lighting.

POWER SAVE AND TAPE PROTECTION CIRCUIT

•To save battery power, the GR-40U (when battery-operated) switches itself off automatically in the following situations:

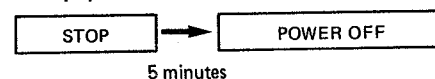
(1) When left for longer than 5 minutes in the Stop mode.

(2) When left for longer than 5 minutes in the Recording Standby (Record-Pause) mode.

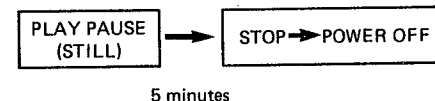
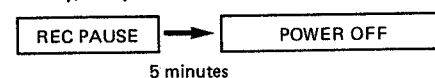
•To protect the tape, the GR-40U (regardless of whether battery-operated or AC-powered) releases tape tension slightly and switches itself off automatically if left for longer than 5 minutes in the Recording Standby (Record-Pause) mode.

•For the same reason, the GR-40U enters the Stop mode and switches itself off automatically if left for longer than 5 minutes in the Still (Play-Pause) mode.

Battery operation



Battery/AC operation



ASSEMBLE RECORDING TECHNIQUE — 1

(To replace the battery pack during recording)

1 If the battery warning appears in the viewfinder or the LCD while recording, stop recording by pressing the POWER switch to OFF, not the STOP button.

3 Press the POWER switch to ON.
•The unit will be in the Recording Standby mode.

2 Replace the battery pack with a charged one.

4 Press the recording start/stop button to start recording.

ASSEMBLE RECORDING TECHNIQUE — 2

(To record onto a partially recorded tape)

1 Play back the tape to a point where you wish a new recording to start.
•Use the SHUTTLE SEARCH button for faster location.

3 Press the REC button.
•The unit will enter the Recording Standby mode.

2 Press the PAUSE/STILL button at the located point.
•The unit will enter the Still mode.

4 Press the recording start/stop button to start recording.

Note:

Some picture distortion may occur at the transition point. This is not due to any defect of the unit.

RECORDING THE DATE/TIME

Warning on lithium battery

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

Battery insertion

This battery powers the date/time function.

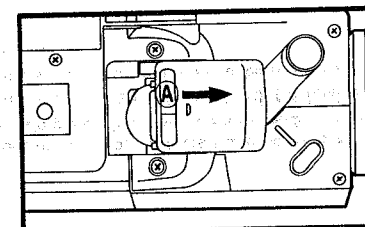
1. Slide the cover off the CLOCK battery compartment on the bottom of the VideoMovie by pressing lightly on the section labelled (A) in the diagram.

2. Insert the provided lithium battery with the plus (+) side up.

3. Slide the cover on unit until it clicks.

Note:

•Switch off the unit's power before inserting the battery.



Battery replacement

The battery lasts for about one year. When the lithium battery warning (▶ E) appears in the viewfinder, this battery needs to be replaced. Obtain a new CR 2025 lithium battery and follow the following procedure.

1. Remove the battery by pressing the knob in the direction of the arrow.

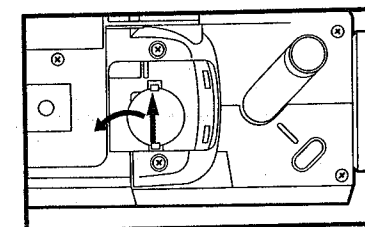
2. Insert the new CR 2025 with the plus (+) side up.

3. Slide the cover back until it clicks.

Note:

Switch off the unit's power before removing old battery.

Replace battery with Matsushita type CR 2025 only. Use of another battery may present risk of fire and explosion.



Date/time setting

Before adjusting the date and time for the first time or after replacing the batteries, JAN. 1.88 blinks in the viewfinder, indicating the clock needs to be set.

① Switch the unit's power on, JAN. 1.88 will blink in the viewfinder. Press MONITOR button to enter rehearsal mode.

② Press the DATE/TIME SELECT button — the year blinks.

③ Press the DATE/TIME SET button to choose the correct number.

④ Press the DATE/TIME SELECT button to select the next item to change, with the item selected

changing in the following sequence:

→ Year → Month → Day → Hour → Minute → Finish Adjustment

⑤ Repeat steps ② and ③ to set all items. After the minute setting has been performed, press the DATE/TIME SELECT button, and items will cease blinking, and the clock will resume normal function. For the auto date record mode, the auto date record reserve indicator will appear.

Date/time recording

The date, time, or date and time can be displayed and recorded according to the selected mode. Press the DATE/TIME MODE button to cycle through the modes in the following order:

→ Auto date record reserve → Date display → Date/time display → Time display

•When the auto-date-record function is selected, "—" appears in the viewfinder, until recording begins. As long as this function is chosen, the date will be automatically displayed and recorded for 5 seconds following the first operation of

the recording start/stop button after the power is turned on.

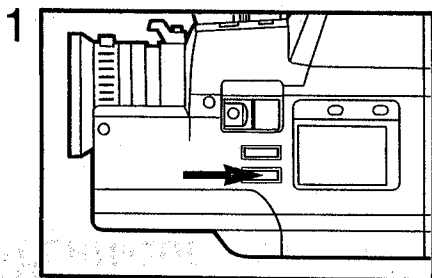
•Auto date record reserve indication will cease to be displayed, if the DATE/TIME ON/OFF button is set to OFF unless power is provided again.

Date/time recording indications

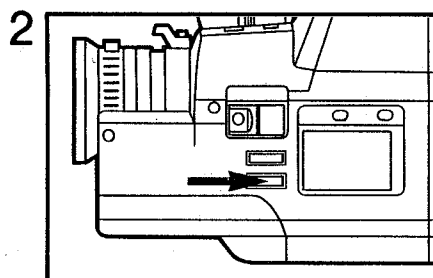
Auto date record	Date display	Date/time display	Time display
Auto date record reserved Auto date record executed	DEC. 31.88	DEC. 31.88 AM 12:30	AM 12:30

MULTIPLE-SPEED ELECTRONIC SHUTTER

The GR-40U is equipped with a selectable high-speed shutter that allows better recording of quick movements for sharp, clear stills or slow-motion playback. Select it when taping fast-action shots that you will want to play back later in still or slow-motion mode.

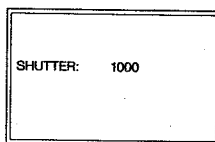
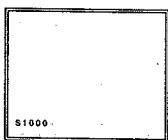


Press the SHUTTER button to switch to the desired electronic shutter speed. This can be done while recording or in any other mode. It continues at the selected speed until switched to another speed.

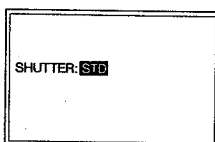


When finished recording the fast-action scene, switch back to the standard shutter speed by pressing the SHUTTER button until STD appears on the LCD.

When selected, the High-Speed Shutter mode is indicated on the viewfinder screen and LCD.



The Standard Shutter mode is indicated by STD on the LCD.



Notes:

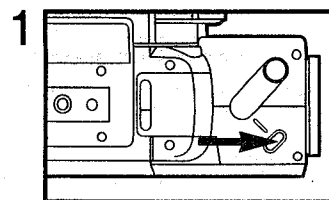
- The High-Speed Shutter mode requires slightly more subject illumination than the Standard Shutter mode. Therefore, the low-light warning may blink in the viewfinder. If so, switch to the Standard Shutter mode.
- Picture color may be adversely affected in the high speed shutter mode when the subject is lit by alternating discharge-type light sources such as fluorescent or mercury-vapor lights.
- When playing back a section recorded in the high-speed shutter mode, movement of subjects in the picture may not be smooth. This is not due to any defect of the unit.

SPECIAL TECHNIQUES

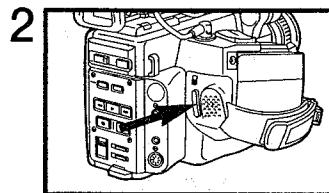
Fade-in/out

The GR-40U is equipped with an automatic fade mechanism for allowing smooth fade-in and fade-out with a white-colored blank screen. Audio also fades in sync with video.

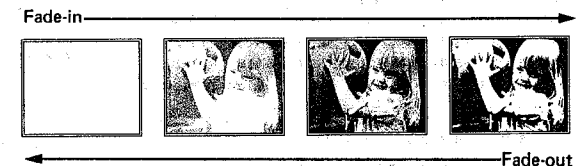
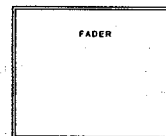
Automatic fade-in



Determine the composition in the Recording Standby mode and press the FADER button to reserve the fade-in mode.



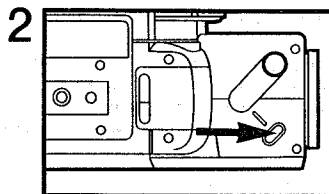
Press the start/stop button. The screen will quickly become white and recording begins. When the start/stop button is released, fade-in will start. It will be completed in about 5 seconds. If the start/stop button is not released when pressed, the white picture will remain on the screen and be recorded.



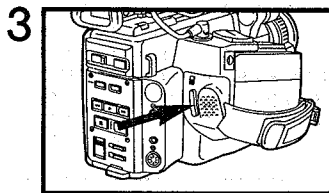
FADER is displayed in the viewfinder when fading is reserved, and continues to be displayed until fading in or out is completed.

Automatic fade-out

1 Start shooting as usual.



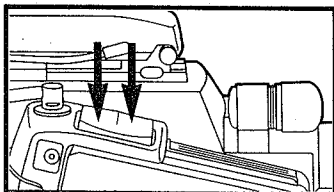
Press the FADER button to reserve the fade-out mode.



Press the start/stop button. Fade-out will start and be completed in about 5 seconds. When completed, Recording standby mode is entered. If the start/stop button is not released when pressed, the final white picture remains on the screen and continues to be recorded, until the button is released.

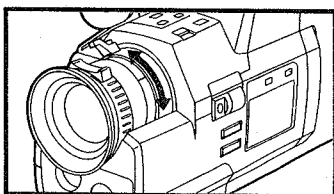
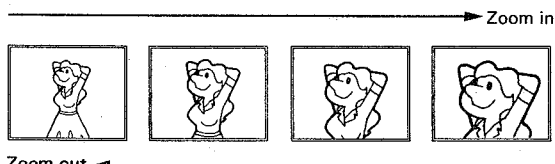
Zooming

When the focal length of the lens is varied by turning the zoom ring, the image appears to come nearer to or retreat from the viewer.



Power zooming

Press "T" for zooming in and "W" for zooming out. Two zooming speeds are available. For slow-speed zooming, press lightly. For regular-speed zooming, press firmly.

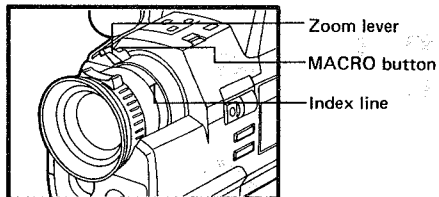


Manual zooming

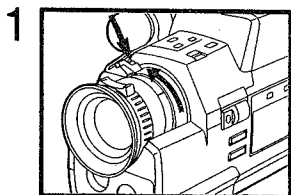
Rotate the zoom lever downwards for zooming in and upwards for zooming out.

Macro Shot

Normally, focusing is possible only for subjects that are more than 1.1 m (3.6 ft) away from the camera. By setting the lens to the Macro mode, it is possible to manually focus in on any subject located inside that limit, right up to the front of the lens. The MACRO and ZOOM ranges combined give continuous shooting ability from close-up to infinity.

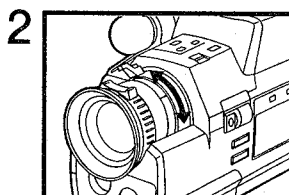


Engage MACRO



While pressing in the macro button, turn the zoom lever in the direction of the arrow until the number "9" on the zoom ring passes the index line.

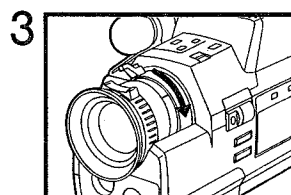
Focus



Focus by turning the zoom lever slowly.

- Use the zoom lever to focus in the MACRO range.
- Turning the zoom ring will slightly alter the angle of view of the lens.
- The auto-focus mechanism does not function during macro shooting.

Release MACRO



To release the Macro mode, turn the zoom lever in the direction of the arrow until the number "9" passes the index line.

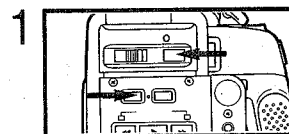
Note:

It is advisable to increase illumination when shooting in macro for best results.

DIGITAL SUPERIMPOSE

The GR-40U's Digital Superimpose function allows 4 titles to be superimposed on a recording in a choice of 8 colors and either positive or negative (reversed) styles for more creative video opportunity.

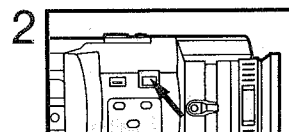
Storing Titles



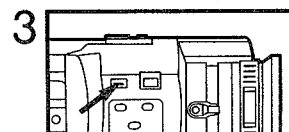
Put the unit into the REC PAUSE or REHEARSAL mode.



• When the "E" indication (lithium battery warning) appears in the viewfinder, titles cannot be stored. Insert the lithium battery, or replace the inserted one with a new one according to the instructions on p. 21.

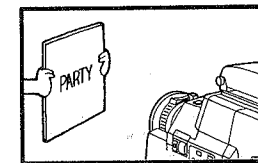
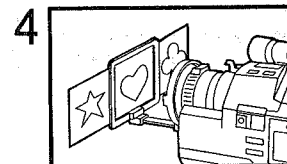


Press the TITLE ON/OFF button.



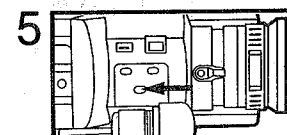
Use the PAGE button to select the page of memory in which you want your title to be stored. The page number will appear on the viewfinder screen.

- The page selection can be changed when the TITLE ON/OFF button is ON.
- When a page of memory contains nothing, it is "empty", and a pattern of vertical stripes will appear in the viewfinder.
- When the power is turned off or the unit is put into the Stop mode, the PAGE mode returns to the page 1 position.



Aim the unit at your title in as well-lit a location as possible. You may also use the provided Title Easel for this purpose.

- If, at this point, the vertical stripes or an old title appearing in the viewfinder prove bothersome, press the TITLE ON/OFF button to turn it off.
- When storing a title, the scene visible in the viewfinder may differ slightly from that which will be recorded on the tape.



Press the TITLE MEMORY button for about 1 second to store the title.

- When a title is stored poorly, check to see that the lighting is adequate and that the title is drawn with bold strokes, then shoot the title again.
- Every time the TITLE MEMORY button is pressed, the previously recorded title stored in that page of memory will be erased, and replaced with the new title.

Creating Titles

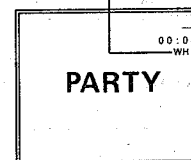
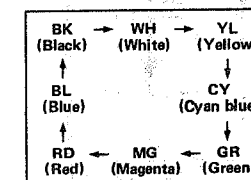
Make note of the following guidelines to assure best results.

1. Create titles using dark colors on light backgrounds — black writing on white paper, for example.
2. Letters should be drawn with broad strokes.



- 6 Press the COLOR button to select the color in which you want your title to appear.

The colors will cycle in the following order:

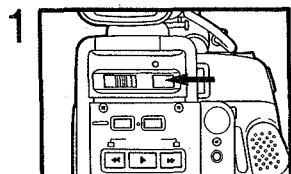


- 7 Press the IMAGE REVERSE button to choose negative or positive style. To store additional titles, in digital memory pages 2-4, repeat steps 3-7 as above.

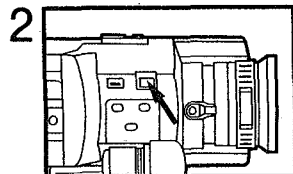
- The TITLE MEMORY button works in both the Rec. Pause and Rehearsal modes; care should be exercised not to press TITLE MEMORY accidentally as this will erase stored titles.

Mixing a title into a recording

●Starting at the beginning of a recording:

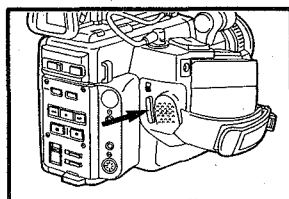


Put the unit into the REC PAUSE mode.

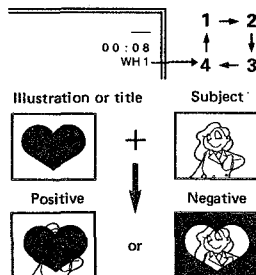


Press the TITLE ON/OFF button to display your title on the viewfinder screen.

4 Press the unit's trigger to begin recording. The title will now be mixed with what you are recording. Press the TITLE ON/OFF button when you wish to end the titled portion of your recording.

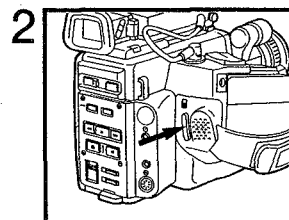
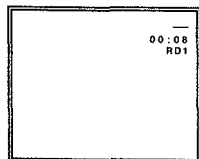


3 Press the PAGE button until the title you wish to use is displayed. The pages will cycle from 1 to 4. Confirm the page, the color, and the neg/posi style. Color choice and neg/posi style can be changed at this point; Press the COLOR button to select a different color, and the IMAGE REVERSE button to choose neg/posi style.

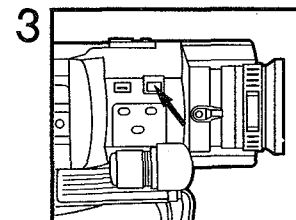


Mixing in the middle of a recoding

1 Confirm the page, color, and neg/posi style of your title. Press the TITLE ON/OFF button to turn it off.



Shoot your live scene by pressing the VideoMovie's trigger. Press the TITLE ON/OFF button when you wish to insert your title. It will be inserted into your ongoing recording at exactly that point.



Press the TITLE ON/OFF button again to end the mixing of your title with the action you are recording.

Notes:

- Color choice, page number, and IMAGE REVERSE selections can be changed when the title is displayed in the viewfinder.
- The "Color" and "Page number" indications displayed in the viewfinder will not be recorded on the tape.
- When an "empty" page is called from memory, a pattern of vertical stripes will appear in the viewfinder.

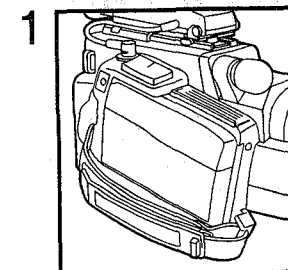
- When the lithium battery for the unit's clock is exhausted, stored titles may be lost. For best results, replace the lithium battery before its one year required replacement date. When the lithium battery warning appears in the viewfinder, as long as power is still supplied to the unit by the main battery pack, or from an AC source (even if the unit's power switch is off), the digital memory will be retained, however, the lithium battery should be replaced at this time.

PLAYBACK

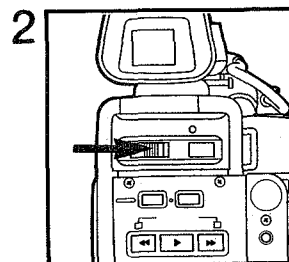
The GR-40U permits playback of recorded **VHS** video cassettes. For connections refer to pages 29 and 30.

Preparations

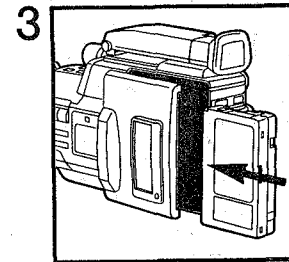
- With a television equipped with audio/video input connectors, set the television's TV/VIDEO switch to VIDEO.
- With a regular television receiver, set the antenna select switch of the RF-V3U RF unit to VIDEO and the TV receiver's channel selector to your video channel (3 or 4).



Connect a power supply unit. (Battery or AC operation: see page 13.)

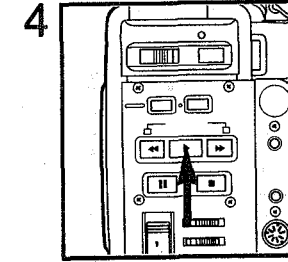


Press the POWER switch to ON.



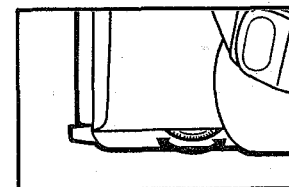
Insert a pre-recorded cassette.

First remove tape slack, then insert the cassette correctly. See page 5.



Press the PLAY button. Playback will start.

- The SP/EP switch may be in either position. The SP or EP mode recording is automatically detected and played back at a correct speed respectively.
- When the end of the tape is reached during playback, the Rewind mode engages automatically.



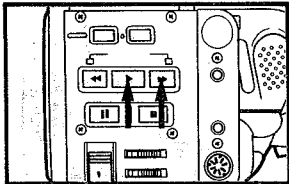
Tracking adjustment

If noise bars appear on the screen, adjust the TRACKING control. Turn it slowly in either direction to minimize noise bars. After playing a particular tape, return the TRACKING control to the center position.



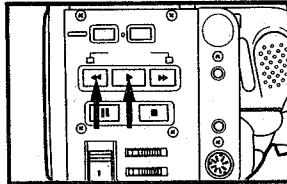
Shuttle Search

Fast-speed playback in the forward direction



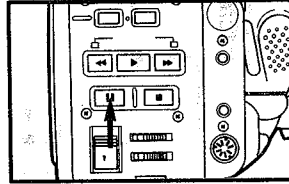
Press the FF button in the Play mode. Playback will be speeded up to 3 times normal speed in SP mode, 7 times normal speed in EP mode, as long as the button is being pressed.

Fast-speed reverse playback



Press the REW button in the play mode. The tape will be played back in the reverse direction at 3 times normal speed in SP mode, 7 times normal speed in EP mode, as long as the button is being pressed.

Still playback



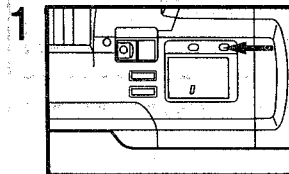
Press the PAUSE/STILL button during playback. The picture will stop on the screen.
 • After about 5 minutes of still playback, the unit enters the Stop mode automatically, for tape protection, and switches itself off.

Notes

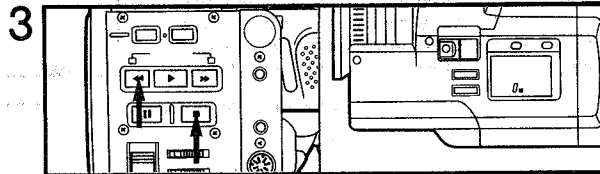
- Noise may appear on the screen during Shuttle Search and still playback. This is not due to any defect of the unit.
- Pictures may become monochrome during Shuttle Search in the SP mode. This is not due to any defect of the unit.

Counter Memory Function

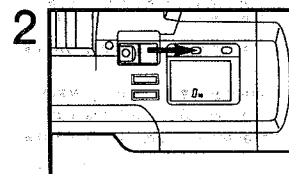
The GR-40U incorporates a counter memory mechanism which facilitates locating a specific tape segment.



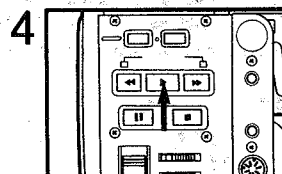
Press the RESET button to reset the counter to "0".



After recording or playback, press the STOP button, then the REW button. The tape will automatically stop at the counter reading of around "0".



Press the MEMORY button. The "M" mark will appear.



Press the PLAY button to start playback.

Notes:

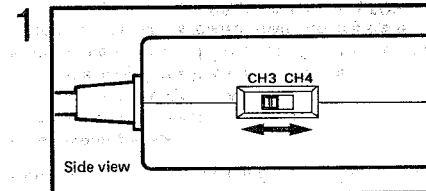
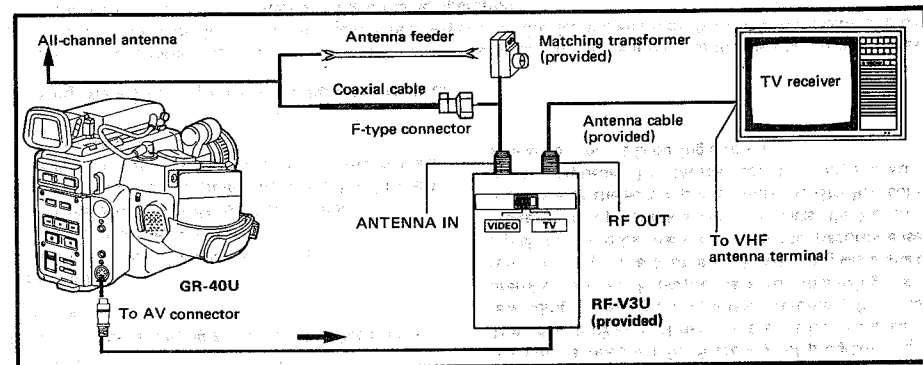
- The counter memory function is effective in the Fast Forward mode as well.
- To cancel the memory function, press the MEMORY button.
- When the power supply unit is disconnected, all indications on the LCD disappear and the counter memory function is instantly cancelled.

CONNECTIONS FOR PLAYBACK

The GR-40U includes playback circuits and allows playback of pre-recorded cassettes simply by connecting it to a television set.

Connection to a television not equipped with audio/video input connectors

For this situation, use the RF-V3U RF unit (provided).



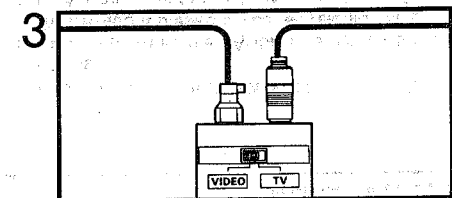
Set the output channel select switch of the RF-V3U to CH3 or CH4.

- The RF unit permits playback of video and audio recordings through a TV receiver. The signals from the RF unit are viewed through a vacant channel not used for broadcasting in your area.
- The RF unit has been set to CH3 prior to shipment. Reset the channel to CH4 (using a screwdriver) in areas where channel 3 is employed for broadcasting.
- This is your video channel. To view video cassettes, always set the TV channel selector to either channel 3 or 4.

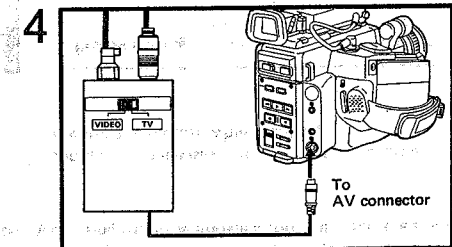
PRECAUTIONS FOR RF-V3U

- For exclusive use with the VideoMovie.
- Do not disassemble or remodel the RF-V3U.
- Do not expose it to strong shocks.
- Unplug the connected equipment during lightning storms. (Never touch the antenna cable.)

2 Remove the antenna cable from the TV receiver.



Connect the antenna cable to the ANTENNA IN terminal of the RF unit. Connect the RF OUT terminal of the RF unit to the 75-ohm coaxial antenna terminal of the TV receiver using the provided antenna cable.



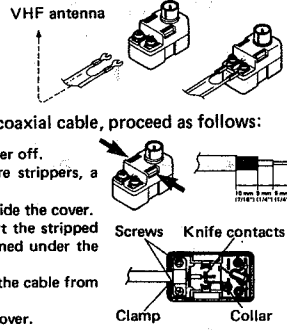
Connect the VIDEO/AUDIO INPUT cable of the RF unit to the AV connector of the GR-40U.

How to affix the matching transformer to your VHF antenna cable

● If your VHF antenna cable is a 300-ohm flat feeder, connect the two lugs to the screws in an ordinary manner.

● If your VHF antenna cable is a 75-ohm coaxial cable, proceed as follows:

- ① Press both side tabs inward and slide the cover off.
- ② Strip the coaxial cable with a pair of wire strippers, a knife, or the like as shown.
- ③ Remove the collar and put it on the pole inside the cover.
- ④ Loosen the screws for the clamp and insert the stripped cable so that the braided portion is positioned under the clamp.
- ⑤ Insert the stripped end (core conductor) of the cable from above into between the knife contacts.
- ⑥ Tighten the screws.
- ⑦ Replace the cover.



OPERATION

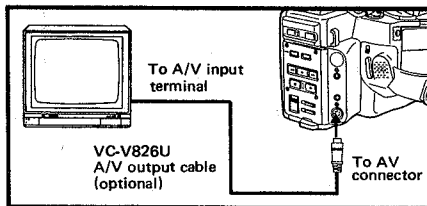
Viewing video cassettes being played back with the GR-40U

To view video cassettes or to monitor the recording, set the VIDEO/TV switch of the RF unit to VIDEO and the TV channel selector to the channel corresponding to the RF output channel (3 or 4).

Viewing television programs

Set the VIDEO/TV switch to TV, and the TV receiver will function as usual.

Connection to a television equipped with audio/video input connectors



- Simply connect the AV connector of the GR-40U to the VIDEO and AUDIO IN connectors of the television using the provided A/V output cable.
- The provided A/V output cable can be extended by 5 m (16 ft) with the optional VC-P1U A/V extension cable.
- Use the VIDEO (or A/V) mode specified on the television, instead of tuning to channel 3 or 4

TAPE DUBBING OR EDITING

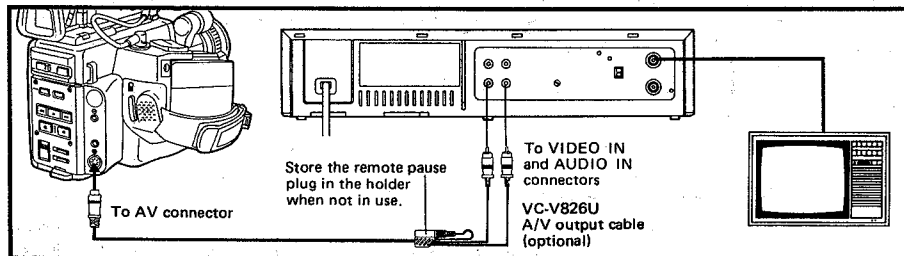
Dubbing onto a standard recorder

Connection

1. Set the DUBBING ON/OFF switch to ON.
2. Connect the AV connector of the GR-40U to the AUDIO and VIDEO IN connectors of the video recorder using the optional A/V output

cable VC-V826U.

3. Connect a television to the video recorder to monitor the picture while dubbing.



Operation

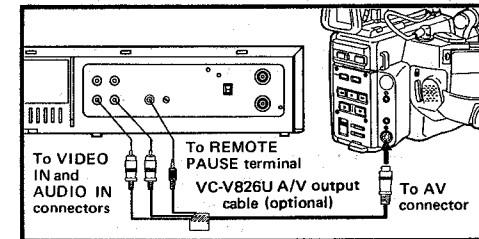
- Put the GR-40U in the Play mode and the connected recorder in the Record mode to copy the recording. To edit out unwanted material, press the recorder's PAUSE button.

Using the Master Edit Control System

This function is available when using designated JVC video decks equipped with a remote pause terminal. The Master Edit Control system allows control of the connected deck using the VideoMovie's controls, preroll editing for edits free of transition-point gaps and distortion.

Connection

1. Set the DUBBING ON/OFF switch to ON.
2. Connect the AV connector of the GR-40U to the AUDIO and VIDEO IN connectors and remote pause terminal of the video recorder.



Operation

Dubbing can be initiated from Stop mode or Still mode.

● For dubbing a tape

1. Switch on the VideoMovie's power.
2. Switch on the deck's power.
3. Put the deck in the Record-Pause mode.
4. Press the QUICK REVIEW/EDIT button to start editing. The tape is loaded, then dubbing starts.
5. Tape stops when the PAUSE/STILL or STOP button of the GR-40U is pressed or counter reaches "M, 0".
6. Deck stops recording and enters the Record-Pause mode

● For editing

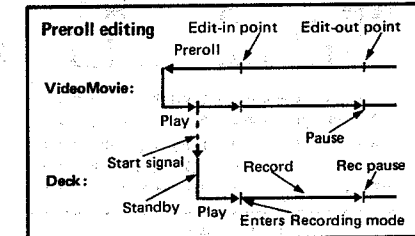
1. Switch on the VideoMovie's power.
2. Turn on the deck's power.
3. Put the deck in the Record-Pause mode.
4. Locate the edit-in point via play, fast-forward, rewind, or Shuttle Search, and press the PAUSE/STILL button.

Setting the edit-out point using counter memory

In the above procedures, counter memory can be used to set the edit-out point before editing takes place, so that the VideoMovie automatically stops playback at the designated point. If the edit-out point is to be set in this way, do so following step 3 of the dubbing operation.

1. Locate the desired edit-out point on the VideoMovie's tape.
2. Press the VideoMovie's PAUSE/STILL button.
3. Reset the VideoMovie's counter to "0".
4. Press the VideoMovie's counter MEMORY button.
5. The VideoMovie enters the Pause mode, and the deck enters the Record-Pause mode.

3. Connect a television to the video recorder to monitor the picture while dubbing.



5. Press the QUICK REVIEW/EDIT button to start editing.
6. Tape stops when the PAUSE or STOP button of the GR-40U is pressed or counter reaches "M, 0".
7. Deck stops recording and enters the Record-Pause mode.

Note:

When the EDIT button is pressed from the Still mode, the tape is rewound for 5 seconds of program time. The Play indicator blinks on the LCD to indicate rewinding is taking place. After prerolling, first the prerolled section is played back for stabilizing tape run. During playback of the GR-40U, it gives a start signal to the deck standing by in the Record-Pause mode to start playback and then to enter the Recording mode at the edit-in point, while the GR-40U continues playback. The Master Edit Control indicator appears on the LCD during dubbing.

Note:

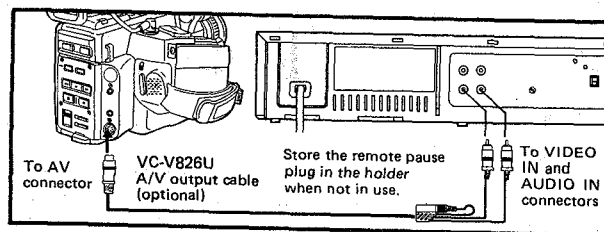
When the tape reaches the preset edit-out point during the dubbing operation, it may stop slightly before or after the designated point on the tape.

USING THE GR-40U AS A VIDEO CAMERA

For continuous documentation of longer events, the GR-40U can be used as an independent video camera in combination with either a deck-type or portable video recorder.

Using a recorder not equipped with a remote pause terminal

- Connect the AV connector of the GR-40U to the AUDIO and VIDEO IN connectors of the video recorder using the optional A/V output cable VC-V826U.



Note:

- In this configuration, it is possible to obtain a continuous recording and an edited-out recording of the same event simultaneously, because the GR-40U's start/stop button only controls the tape inside itself while another tape loaded in the connected recorder continues running. To record on the GR-40U's tape, follow the same recording procedure as mentioned before: press REC standby and then the start/stop button.

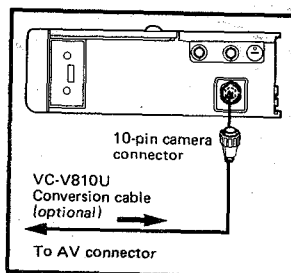
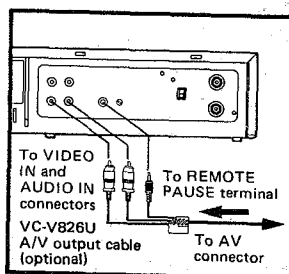
Using a recorder equipped with a remote pause terminal or with a 10-pin camera connector

For a recorder with a remote pause terminal

- Connect the AV connector of the GR-40U to the AUDIO and VIDEO IN connectors and remote pause terminal of the video recorder using the optional A/V output cable VC-V826U.

For a recorder with a 10-pin camera connector

- Connect the AV connector of the GR-40U to the 10-pin camera connector of the second recorder using the optional VC-V810U conversion cable.



Note:

- To record on the GR-40U's tape as well, press the REC Standby button and then the start/stop button.

Precautions

- Power is not supplied to the GR-40U from the connected VCR. Independent power supply is required for both the GR-40U and the VCR.
 - If you stop recording by pressing the GR-40U's start/stop button, the connected VCR also stops in the Pause mode. However, the pause command signal is not delivered to the connected VCR in the following cases and, therefore, the VCR will start automatically:
 - when the GR-40U is switched off or its battery becomes discharged.
 - when the VC-V810U cable is disconnected.
- Therefore, before replacing the battery or tape for the GR-40U, put the connected VCR either in the STOP or REC LOCK mode.

Operation

- Press the MONITOR button. The camera output signal is now available via the A/V output cable.
- Put the connected recorder in the Record mode. Recording will start. Tape start/stop should be controlled with the recorder's buttons.

Operation

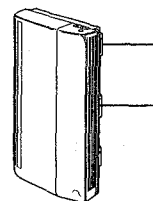
- Press the MONITOR button.
- Put the connected recorder in the Recording Standby (Record-Pause) mode.
 - The viewfinder's mode indication corresponds to the state of the connected recorder.
- Press the start/stop button of the GR-40U to start recording.

CHARGING THE BATTERY PACK

To charge the battery pack, use the exclusive AC power adapter/battery charger AA-V5U (provided/optional) or car battery charger BH-V5U (optional).

A WORD ON THE EXCLUSIVE BN-V5GU/V6GU/V7GU BATTERY PACKS

The BN-V5GU/V6GU/V7GU are nickel-cadmium batteries. Give attention to the following to make the most of their characteristics.



Temperature ranges:

The recharging time is based on room temperature of 20°C (68°F). The lower the temperature, the longer the recharging time.

For charging: 10°C to 35°C (50°F – 95°F)
For operating: 0°C to 40°C (32°F – 104°F)
For storing: -10°C to 30°C (14°F – 86°F)

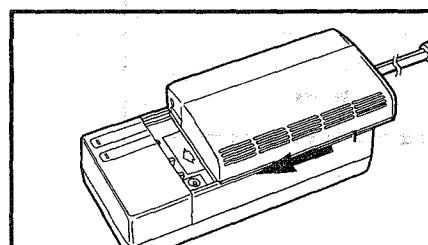
The battery pack has been kept in the uncharged state for shipment. Therefore, before use, charge it. BE SURE TO CAREFULLY READ THE CAUTION ATTACHED TO THE BATTERY PACK.

Charging procedure

Charging time

BN-V5GU 50 min.	BN-V6GU 70 min.
BN-V7GU 80 min.	

- The charging time differs depending on the ambient temperature and the condition of the battery pack.



- Connect the AC power cord to a wall outlet. (The POWER indicator will light.)
- Align the marks on the battery pack and adapter.
- Slide the battery pack in the direction of the arrow until it locks in place.
- When charging is completed, the CHARGE indicator goes out.

PRECAUTIONS

- If used near a radio, the provided AA-V5U AC power adapter/battery charger may interfere with reception.

- Prevent inflammables, water and metallic objects from entering the unit.
- Do not disassemble or modify the unit.
- Do not apply shocks to the unit.
- Do not subject the unit to direct sunlight.
- Avoid using the unit in extremely hot or humid places.
- Avoid using the unit in places subject to vibrations.

Note:

The optional BH-V5U Car Battery Charger can charge the batteries from a car battery. For details refer the instructions of the BH-V5U.

Recording time for the GR-40U

BN-V5GU 30 min.	BN-V6GU 60 min.
BN-V7GU 90 min.	

- The recording time per charge is influenced by the duration of recording standby, frequency of zooming, etc. It is safer to have spare battery packs.

When using the AA-V5U in areas other than the USA. USING HOUSEHOLD AC PLUG ADAPTER

In case of connecting the unit's power cord to an AC wall outlet other than American National Standard C73 series type, use an AC plug adapter, called a "Siemens Plug", as shown below.

For this AC plug adapter, consult your nearest JVC dealer.



USING THE CASSETTE ADAPTOR (provided)

The VHS compact video cassettes recorded with the GR-40U can be played back with a standard VHS machine by using the provided C-P5U Cassette Adapter.
(A compact video cassette installed in the cassette adapter is fully compatible with a standard VHS machine for both recording and playback.)

●C-P5U Cassette Adapter
Being battery-operated, the C-P5U performs tape loading and unloading automatically.

Note:
●During special-effects playback (slow motion, still frame, etc.) the picture may vibrate or noise bars may appear on the screen.

Compartment door

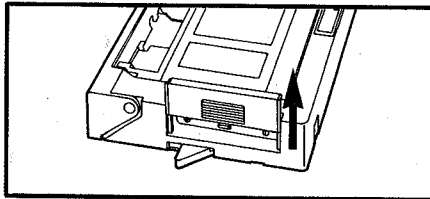
Sliding latch

VHS cassette

For more details refer to the instruction manual of the C-P5U.

Inserting the battery into the cassette adapter

Remove the battery cover by sliding it up.
Install one "AA" battery and reattach the cover.



General Battery Precautions

- When the unit is not operating even when correctly operated, the batteries are exhausted. Replace them with fresh AA batteries.
- Use only AA size batteries in the remote control unit. Please make note of the following rules for battery use. When misused, batteries can leak or explode.

1. Insert the batteries correctly according to the diagram inside the battery section.
2. Do not use old and new batteries together.
3. Do not use two different kinds of batteries. Although sizes may be the same, voltages may differ.
4. Do not expose batteries to excessive heat as they can leak, or explode. Do not dispose of batteries in a fire.
5. Remove batteries from the unit if it is to be stored for an extended period to avoid battery leakage which can cause malfunctions.

VIEWFINDER INDICATIONS

Focus mode

- ▶ Camera is focused beyond subject
- Focus is correct
- ◀ Camera is focused in front of subject
- No indication .. Auto-focus is operating

White balance mode setting

- ☀ Daylight.
- 💡 Fluorescent lighting.
- 💡 Halogen or tungsten lighting.
- No indication ... Auto white balance is operating

Fading mode

- FADER Fade function is engaged.
- FADER- Fading is being performed
- No indication .. Fade function is not engaged

Elapsed Time Indicator
Will read 1:00:00 after one hour of recording.

Lithium battery warning
▶E... Lithium battery is exhausted, or not yet installed.

EP REC
59:59
WHI

BATTERY

LIGHT
S1000

JAN 31 88
AM 11:59

Title Page indications

- 1 ... First page
- 2 ... Second page
- 3 ... Third page
- 4 ... Fourth page

Title Color indications

- BK ... Black
- WH ... White
- YL ... Yellow
- CY ... Cyan blue
- GR ... Green
- MG ... Magenta
- RD ... Red
- BL ... Blue

Date indications

- S1000 1/1000 shutter mode is engaged
- S500 1/500 shutter mode is engaged
- S250 1/250 shutter mode is engaged
- No indication 1/60 (standard) shutter mode is engaged

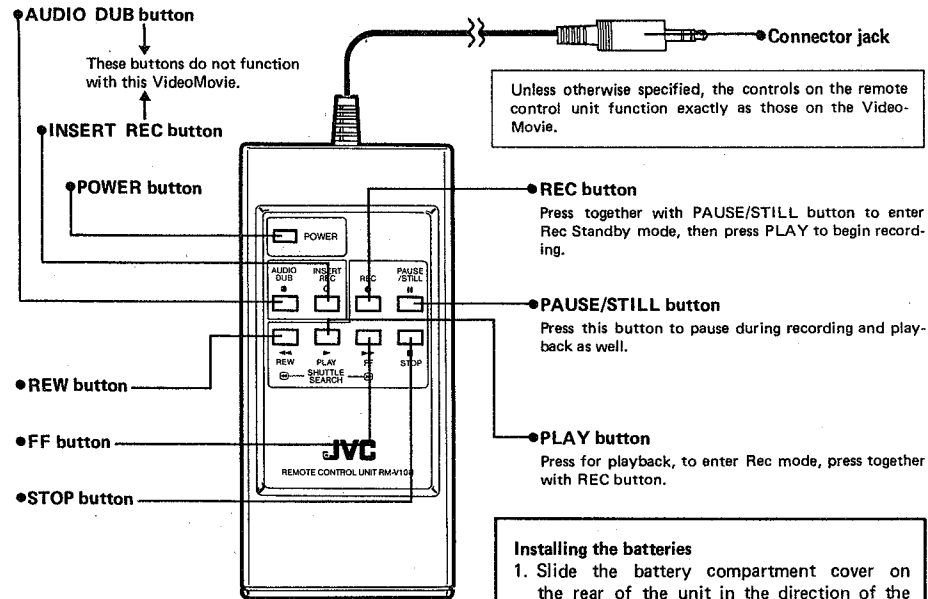
Time indications
12 hour indications with AM or PM
- - - - - Auto Date Rec is engaged

Operation mode

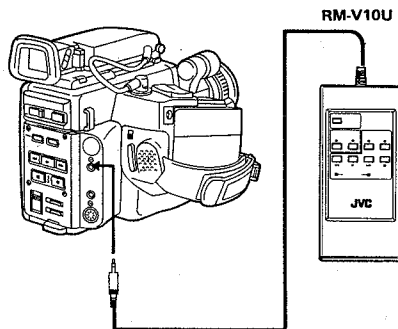
- REC Recording is being performed in SP mode
- EP REC Recording is being performed in EP mode
- Rehearsal or Recording Standby in SP mode is engaged
- EP Rehearsal or REC. Standby in EP mode is engaged
- REC or EP REC- .. Tape end warning (blinking will begin a few minutes before tape ends)
- No indication Stop or Play mode is engaged

USING THE REMOTE CONTROL UNIT (optional)

The remote control unit RM-V10U (optional) permits VCR functions to be controlled from a distance.



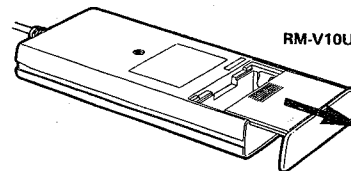
Connecting the remote control



- Plug the remote control cable of the remote control unit into the remote connector on the VideoMovie.

Installing the batteries

1. Slide the battery compartment cover on the rear of the unit in the direction of the arrow.



2. Insert 2 "AA"-size batteries (provided) in the correct directions into the battery compartment.
3. Replace the cover.

Precautions

- Avoid violent shocks, especially take care not to drop the unit.
- Take care not to allow liquid to spill into the unit.
- Do not place heavy objects on the unit.
- Avoid leaving the unit in places subject to direct sunlight or extremely high temperatures.

SYSTEMS FLEXIBILITY

For maximum enjoyment, make the most of the provided or optional accessories depending on the situation.

- Regular battery pack BN-V5GU

Page 13

- High-capacity battery pack BN-V6GU

Page 13

- Super High-capacity battery pack BN-V7GU

Page 13

- Car battery charger BH-V5U

Pages 13 and 33

- Use to charge the battery pack, or power the GR-40U using a car battery.

- AC power adapter/battery charger AA-V5U

Pages 13 and 33

- Use to power the GR-40U with household AC current or charge the battery pack.

- Car battery cord AP-P1U

Page 13

- For power supply from a car battery.

- A/V extension cable VC-P1U

- Use to extend the A/V cable.

- RF unit RF-V3U

Pages 29 and 30

- Use to connect the GR-40U to a regular TV receiver for playback.

- Conversion cable VC-V810U

Page 32

- For connecting the GR-40U to a VCR with a 10-pin camera connector.

- Remote control unit RM-P1U

Page 40

- Controls recording start/stop from a distance.

- Shoe adapter CU-V410U

Page 39

- Use to attach microphone, character generator etc.

- Remote control unit RM-V10U

Page 36

- Controls VideoMovie's VCR functions from a distance.

- Character generator CG-P50U/CG-V60U

Page 39

- Allows superimposition of titles, dates and lap time during recording.

SHOE ADAPTER (optional)/ CARRYING HANDLE (optional)

- **Compact video cassette TC-20**

▶ Page 5

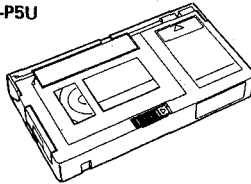
Allows 20 minutes of recording and playback in SP mode, and 60 minutes of recording and playback in EP mode.



- **Cassette adapter C-P5U**

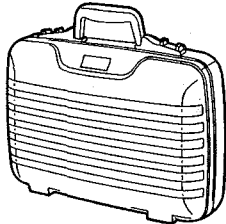
▶ Page 34

Enables the TC-20 compact video cassette to be used with regular VHS machines.



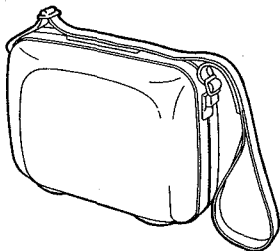
- **Carrying case CB-V32U**

Use to carry the GR-40U together with accessories.



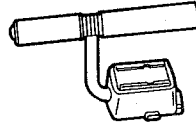
- **Carrying bag CB-V22U**

Use to carry the GR-40U together with basic accessories.



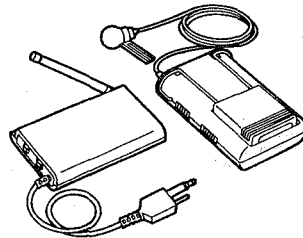
- **Carrying handle VU-V130U**

Use to carry GR-40U.



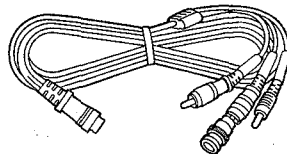
- **Wireless microphone unit WM-V1U**

Allows remote sound recording, for expanded movie-making flexibility.

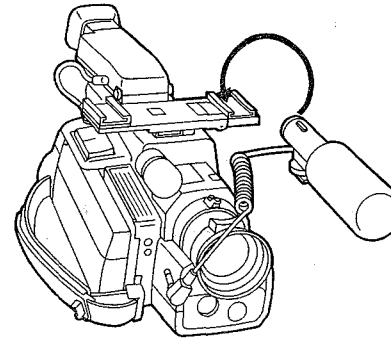


- **AV output cable VC-V826U**

Use to connect the GR-40U to television set equipped with audio/video input connectors for playback, or to a second video recorder for dubbing.



Attaching external microphone using shoe adapter.

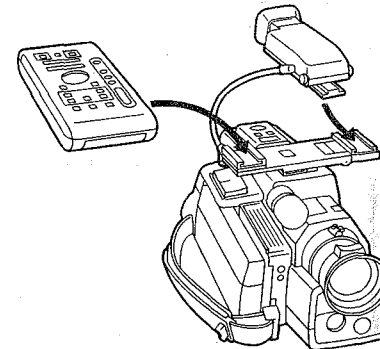


To attach external microphone or character generator.

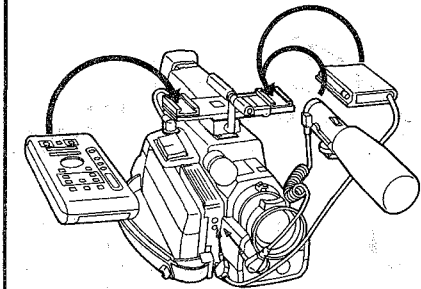
CAUTION

- Do not attach a video light, its heat could cause malfunctioning of the GR-40U.

Attaching character generator using shoe adapter.



Attaching character generator and external microphone using shoe adapter and carrying handle.

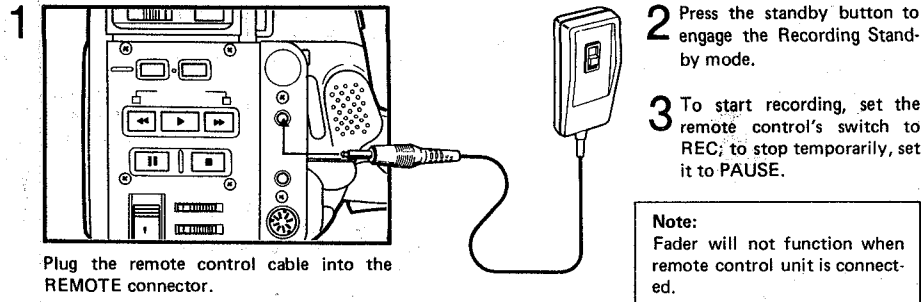


Notes:

- Do not adjust the viewfinder angle while using shoe adapter.
- Keep carrying handle in up position while attaching accessories.
- Run the microphone cord behind the shoe adapter.

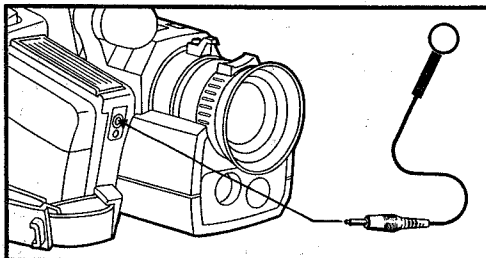
REMOTE CONTROL UNIT RM-P1U (optional)

The remote control unit RM-P1U (optional) permits recording start/stop to be controlled from a distance.



EXTERNAL MICROPHONE

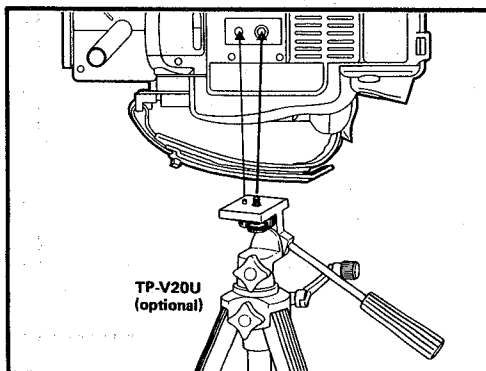
To use another microphone, do the following:



Plug the external microphone's cord into the microphone jack.

- When using the optional wireless microphone unit, plug the cable of receiver unit into the microphone jack.

TRIPOD MOUNTING



Align the screw and camera direction stud of the tripod with the camera's tripod mounting socket and stud hole, and firmly tighten the screw.

SUPPLEMENTAL INFORMATION

What is "color temperature"?

Light is composed of various color components in different proportions. A relationship exists between the temperature of a light source and the color components of the emitted light; as the temperature rises, the color of the light varies from red, orange, yellow, white to blue in that order. "Color temperature" is a value that expresses differences in color among light sources, measured in Kelvin degrees. Bluish light has a higher color temperature than reddish light.

What is "white balance"?

Making the colors look natural on TV is what white balance is all about. Because a camera is not as adaptable as the human eye, if a light source is reddish, white subjects in that light are recorded as reddish. White balance adjustment is performed to compensate for color temperature variations of light so that whites are reproduced as white. Correct white balance makes all other colors correct. The GR-40U can perform automatic white balance adjustment in the full-auto mode. However, if illumination is insufficient, white balance adjustment cannot be performed. To obtain correct colors, therefore, sufficient illumination is essential.

What is "illuminance"?

"Illuminance" (also called 'luminance') is the intensity or brightness of light, expressed in lux or foot-candles (fc). The GR-40U is designed to provide best pictures under the conditions of a 700-lux (67 fc) illuminance, although shooting is possible all the way down to 8 lux (0.8 fc). To obtain good pictures in very bright light, the use of an ND (neutral density) filter is recommended. (See chart on next page.)

How to get good color pictures

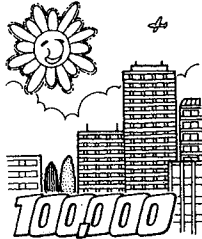
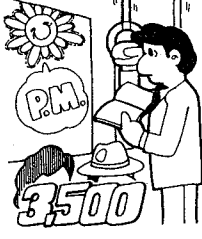
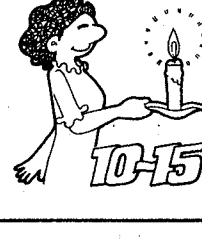
The simplest way is to provide sufficient lighting (close to the camera's reference illuminance) and accurately adjust the camera to the color temperature of that lighting. If light sources of different color temperatures are used together, accurate white balance adjustment is very difficult. For example, if natural light is mixed with artificial light, which is likely to occur next to windows, correct colors of the subject are difficult to obtain. It is recommended in such cases that curtains in the room be closed to shut out light from outside. Also, when artificial lighting devices are used, they should all have the same color temperature. For example, it is recommended that incandescent or halogen lamps not be used together with fluorescent lighting.

Color temperatures of various artificial lighting

Type of illumination		Color temperature
Tungsten lamp for home use		2800 K
Tungsten lamp for photographic use		3200 K
Quartz-halogen lamp		
Blue lamp for photographic use		5000 K
Fluorescent lamp	Warm white	3500 K
	White	4500 K
	Daylight type	6500 K

Illuminance chart

• The values on this chart are approximated to give you a rough reference.

ND filter desired	Unit: Lux (fc)		Range for practical use	Lighting desired
	100,000 (9,300)	• Clear sky, mid-day, under sunlight (100,000/9,300) • Clear sky (10:00 a.m.) under sunlight (65,000/6,045) • Clear sky (3:00 p.m.) under sunlight (35,000/3,255) • Cloudy sky (mid-day) under sunlight (32,000/2,976) • Cloudy sky (10:00 a.m.) under sunlight (25,000/2,325)		
	10,000 (930)	• By the window during the afternoon (3,500/324)		
	2,000 (190)	• Cloudy sky (one hour after sunrise) (2,000/190)		
	1,000 (94)	• Clear sky (one hour before sunset) (1,000/94)		
	600 (55)	• Counters at department stores (500 – 700/47 – 66)		
	500 (47)	• Bowling center (500/47) • Office under fluorescent light (400 – 500/37 – 47) • Library (400 – 500/37 – 47) • Direct light of a flashlight at 1m (3 ft) distance (250/22.7)		
	100 (9)	• Streetlights at night (150 – 200/13.5 – 18)		
	80 (7.3)			
	Minimum lighting for an object			
	15 (1.4)	• Cigarette lighter (at a distance of 30cm/11.8 in) (15/1.4)		
	10 (1)	• Candlelight (at a distance of 20cm/7.9 in) (10 – 15/1 – 1.4)		

IN CASE OF DIFFICULTY

What may initially appear to be trouble is not always a real problem. Make sure first

Symptoms	Check points
Power	
No power is supplied	• Is the battery pack correctly installed? • Is the battery pack charged? • Is the power supply unit correctly connected? • Is the POWER switch of the connected AC adapter set to ON?
Recording	
Recording is impossible.	• Check to see if the cassette safety tab is in place. See page 5.
Picture colors greatly differ from actual subject colors.	• If in the manual white balance mode, check the setting of the  button.
No sound is recorded with an external microphone.	• Is the microphone's switch set to ON?
Recording does not start.	• Have you pressed the standby button first?
Playback	
Tape is running, but no playback picture appears.	• Is the TV/VIDEO switch of the RF unit set to VIDEO? • Is the TV receiver set to channel 3 or 4? • If A/V connection is used, is the TV's VIDEO/TV switch set to VIDEO?
Noise bars appear in the playback picture.	• Use the TRACKING control to reduce noise bars.
Playback picture is blurred or interrupted while TV programs received are clear.	• Video heads may be dirty or worn out. For head cleaning or replacement, consult the nearest JVC Service Dealer.
Tape transport	
Tape stops during fast forward or rewind.	• Is the "M" indication visible in the tape counter? If so, press the MEMORY button to cancel the memory function.
Rewinding or fast forwarding is impossible.	• Check to see if the tape has already been fully wound on one reel or the other.
Other	
No function is available with more than two mode indicators lit.	• If this should happen when using power supply units other than the battery pack, turn their POWER switch on and off. With a battery pack, replace it with another charged one.
Vertical white lines appear when shooting a very bright object.	• This may occur when the background contrasts very much with the object. This is normal.

The GR-40U is a microcomputer-controlled device. External noise and interference might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC power adapter, etc.); and then reconnect it and proceed as usual from the beginning.